

**THE MINISTRY OF HEALTH OF UKRAINE  
DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY  
DEPARTMENT OF ENDOCRINOLOGY**

**COURSE SYLLABUS  
CLINICAL PHARMACOLOGY  
For 4th-year students**

Training specialists of the second (master's) level of higher education  
Subject area 22 - Healthcare  
**Major 221 Dentistry**

**Lviv-2023**

<b>1. General information</b>	
<b>Name of the faculty</b>	
<b>Educational program</b>	22 Healthcare, 221 Dentistry, second (master&apos;s) level of higher education, full-time form
<b>Academic year</b>	2023-2024
<b>Name of discipline, code (e-mail address on the website of D anylo Halytsky LNMU)</b>	<i>Clinical Pharmacology, OK 33.</i> <a href="mailto:Kaf_endocrinology@meduniv.lviv.ua">Kaf_endocrinology@meduniv.lviv.ua</a>
<b>Department (name, address , telephone number, e-mail)</b>	Department of Endocrinology, Lviv, 1 Ostrozkoho, tel.(032)2759510, (032) 2764673; <a href="mailto:Kaf_endocrinology@meduniv.lviv.ua">Kaf_endocrinology@meduniv.lviv.ua</a>
<b>Head of the department (contact e-mail)</b>	Prof. Alina Mechyslavivna Urbanovych urbanovych_alina@meduniv.lviv.ua
<b>Studying year</b>	5
<b>Semester</b>	9
<b>Type of discipline / module</b>	Mandatory
<b>Teachers</b>	
Olesia Kikhtyak, Ph.D., Professor	kikhtyak_oleca@meduniv.lviv.ua
Eugene Pleshanov, Ph.D., Professor	pleshanov_eugene@meduniv.lviv.ua
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Erasmus+	no

The person responsible for the syllabus	Сафонова Оксана <a href="mailto:Safonova_Oksana@meduniv.lviv.ua">Safonova_Oksana@meduniv.lviv.ua</a> <a href="mailto:safonova.oks@gmail.com">safonova.oks@gmail.com</a>
Number of credits ECTS	1,0
Number of hours	Лекції – 0 год. Практичні заняття – 20 год. Самостійна робота – 10 год.
Language of study	Українська, англійська
Information about consultations	Проводяться згідно графіку консультацій, який представлений на сайті кафедри.
Address, phone number and regulations of the clinical base	№1: "Lviv Regional State Clinical Treatment and Diagnostic <i>Endocrinology Center</i> ", 79010, Lviv, 1, Ostrozkohe str.; tel. 275-95-20, tel./ fax: 276-94-89, e-mail: <a href="mailto:lred@ua.fm">lred@ua.fm</a> , 24h/day  №2: «Lviv city clinical hospital №4», 79007, Lviv, 3, Stetska str., tel. 260-21-03, e-mail: <a href="mailto:4kmkl_uoz_lviv@ukr.net">4kmkl_uoz_lviv@ukr.net</a> 24h/day
<b>1. Short description for the course</b>	
Clinical pharmacology includes the study of group affiliation of medicines, their main mechanisms of action, features of their pharmacokinetics, pharmacodynamics, manifestations of side effects and symptoms of overdose, main indications for appointment and interaction with other medicines. The subject of study of the discipline is medicines and their interconnection with the human body.	
<b>1. Course Goals and Learning Objectives</b>	
<p>1. The purpose of teaching the discipline "Clinical Pharmacology" is the science engaged in the study of medicines (LV) in human application (WHO). It teaches the doctor to choose from all existing the most effective and safest drug for individualized therapy and prevention, taking into account its concomitant diseases. In-depth knowledge of clinical pharmacology will allow you to determine the correct regimen of the use of LV, its dosage form and ways of administration, prevent and eliminate adverse reactions and unwanted interaction of drugs with each other.</p> <p>Clinical pharmacology as a subject aims to train specialists who have a sufficient amount of theoretical knowledge and practical skills for conducting the most rational medical therapy in a particular patient, have a methodology for choosing the most effective and safe medicines, as well as their combinations, taking into account the individual characteristics of the organism, the course and form of the disease, the presence of concomitant pathology, on the basis of evidence-based medicine.</p> <p>1. <i>1. Objectives of training: The main task of studying the discipline "Clinical Pharmacology" is to prepare a specialist with a sufficient amount of theoretical knowledge and practical skills to conduct the most rational drug therapy for a particular patient. Також після вивчення дисципліни студент повинен володіти методологією індивідуального підбору ефективних і безпечних препаратів на підставі фармакокінетики, фармакодинаміки можливих виявів побічної дії, особливостей перебігу захворювання, віку хворого, оптимальних лікарських форм, складання раціональної у фармакокінетичному і фармакодинамічному відношенні комбінації ліків. Also, after studying the discipline, the student should have the methodology of individual selection of effective and safe drugs on the basis of pharmacokinetics, pharmacodynamics of possible manifestations of side effects, peculiarities of the course of the disease, the age of the patient, optimal dosage forms, compilation of a combination of drugs that is rational in pharmacokinetic and pharmacodynamic relation.</i></p> <p>Thus, the leading tasks for the subject of clinical pharmacology are:</p> <ul style="list-style-type: none"> <li>• - Determine the group affiliation of medicines according to modern classifications.</li> <li>• - Determine pharmacodynamics and pharmacokinetics of drugs and their mechanism of action.</li> <li>• - Determine the manifestations of possible side effects and symptoms of overdose, methods of their prevention and treatment.</li> </ul>	

- - Justify the main indications for appointment, adequate dosage form, ways of introduction and interaction with other medicines.
- Specify and analyze the use of medicines in the provision of emergency care in dentistry.

**To know:**

- modern classifications of medicines,
- pharmacological characteristics of medicines,
- indications for the use of medicines according to the knowledge of their pharmacodynamics,
- side effects in the use of medicines and their contraindications for use.
- features of the use of medicines in dentistry;

- features of the interaction of drugs of the main groups with local anesthetics.

**To be able to:**

- to conduct a survey of patients in order to collect medical history and to predict the possibility of complications of pharmacotherapy;
  - choose the necessary medicines, adequate dosage form and dosage regimen when prescribing patients with major pathological syndromes;
  - determine the main methods of clinical examination of patients to assess the effectiveness and safety of prescribing medicines and analyze their results;
  - use the basic parameters of pharmacokinetics for the purpose of rational prescription of drugs;
  - interpret and take into account in clinical practice the peculiarities of clinical pharmacokinetics, pharmacodynamics, side effects and interaction of the main groups of medicines;
  - predict the effects of drug interaction with combined use and have the skills of prevention and correction of undesirable effects of medicines;
  - prescribe and conduct pharmacotherapeutic analysis of prescribed drugs,
  - to explain the dependence of drugs on the characteristics of pharmacokinetics in patients of different ages, concomitant diseases and concomitant therapy,
  - evaluate the benefit/risk ratio when using medicines,
- create an algorithm for helping patients with acute drug poisoning;
- be able to fill in the printed and electronic card, regarding unwanted side effects of drugs and assist in their detection;
- be able to prescribe prescriptions of medicines.

1. 2. Competence and results of training, the formation of which provides the study of discipline (general and special competences).

According to the requirements of the OPP, the discipline ensures the acquisition of competencies by students:

- - *integral: the ability to solve typical and complex specialized problems and practical problems in professional activities in the field of health protection, or in the process of training, which involves the conduct of research and/or implementation of innovations and is characterized by the complexity and uncertainty of conditions and requirements.*

- *general:*

1. Ability to abstract thinking, analysis and synthesis.
2. Knowledge and understanding of the subject area and understanding of professional activities.
3. Ability to apply knowledge in practical activities.
4. Ability to communicate in the state language both orally and in writing.
5. Ability to communicate in English.

6. Skills in the use of information and communication technologies.
7. Ability to search, process and analyze information from different sources.
8. Ability to adapt and act in a new situation.
9. The ability to identify, ask and solve problems.
10. The ability to be critical and self-critical.
11. Ability to work in a team.
12. The desire to preserve the environment.
13. Ability to act socially responsibly and consciously.
14. Ability to realize its rights and obligations as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, rule of law, rights and freedoms of man and citizen in Ukraine.
15. The ability to preserve and multiply moral, cultural, scientific values and achievements of society on the basis of understanding the history and patterns of the development of the subject area, its place in the general system of knowledge about nature and society and the development of society, technology and technology, to use different types and forms of motor activity for active recreation and healthy lifestyle.  
- *special (professional, subject):*
  1. Ability to collect medical information about the patient and analyze clinical data.
  2. Ability to interpret the result of laboratory and instrumental studies.
  3. Ability to diagnose: determine the previous, clinical, final, concomitant diagnosis, emergency conditions.
  4. Ability to plan and carry out measures to prevent diseases of the organs and tissues of the oral cavity and maxillofacial area.
  5. Ability to design the process of medical care: determine approaches, plan, types and principles of treatment of diseases of organs and tissues of the oral cavity and maxillofacial area.
  6. Ability to determine the rational mode of work, rest, diet in patients with diseases of the organs and tissues of the oral cavity and maxillofacial area.
  7. Ability to determine the tactics of patients with diseases of the organs and tissues of the oral cavity and maxillofacial area with concomitant somatic diseases.
  8. Ability to perform medical and dental manipulations.
  9. Ability to treat major diseases of organs and tissues of the oral cavity and maxillofacial area.
  11. Ability to determine tactics, methods and emergency medical care.
  13. Ability to assess the environmental impact on public health (individual, family, population).
  14. Ability to maintain regulatory medical documentation.
  15. Processing of state, social and medical information.
  16. Ability to organize and conduct rehabilitation activities and care in patients with diseases of the oral cavity and THC.
  17. Ability to provide legal support for own professional activity.
  18. Ability to provide pre-medical assistance under the protocols of tactical medicine.

### 1. Course prerequisites

The information on the disciplines, basic knowledge and results of training required for the student (enrolled) to successfully study and master the competencies in this discipline requires basic knowledge of the following disciplines:

1. Normal physiology.
2. Pathological physiology.
3. Biological and bioorganic chemistry.
4. Microbiology, virology.
5. Pharmacology.
6. Propedeutics of internal medicine.

### 5. Program results of training

#### Learning Results List

Code learning of training	Program results of training	Based on the competency matrix code
<i>Kn-1</i>	Knowledge of modern classification of medicines.	PLR-14
<i>Kn-2</i>	Knowledge of pharmacological characteristics of medicines.	PLR-14
<i>Kn-3</i>	Knowledge of indications for the use of medicines.	PLR-4, 8, 11, 14
<i>Kn-4</i>	Knowledge of pharmacokinetics and pharmacodynamics of medicinal products.	PLR-14
<i>Kn-5</i>	Knowledge of side effects in the use of medicines and contraindications to their use.	PLR-14
<i>Kn-6</i>	Knowledge of the peculiarities of the use of medicines in dentistry.	PLR-4, 8, 11, 14
<i>Kn-7</i>	Knowledge of the peculiarities of interamodia of drugs of the main groups with local anesthetics.	PLR-4, 8, 11, 14
<i>Sk-1</i>	The ability to conduct a survey of patients in order to collect medical history and predict the possibility of complications of pharmacotherapy.	PLR-1-5.
<i>Sk-2</i>	Ability to choose the most effective and safe drug, optimal dosage, dosage, route of administration when prescribing patients with major pathological syndromes.	PLR-8-11
<i>Sk-3</i>	Ability to interpret and take into account in clinical practice the peculiarities of clinical pharmacokinetics, pharmacodynamics, side effects and interaction of the main groups of medicines.	PLR-4, 8, 11, 14
<i>Sk-4</i>	The ability to predict the effects of drug interaction with combined use and have the skills of prevention and correction of undesirable effects of drugs.	PLR-4, 8, 11, 14

<i>Sk-5</i>	Ability to prescribe and conduct pharmacotherapeutic analysis of prescribed drugs.	PLR-10, 11, 14
<i>Sk-6</i>	The ability to explain the dependence of drugs on the peculiarities of pharmacokinetics in patients of different ages, concomitant diseases and concomitant therapy.	PLR-8-11
<i>Sk-7</i>	Ability to evaluate the benefit/risk ratio when using medicines.	PLR-8-11
<i>Sk-8</i>	The ability to create an algorithm for helping patients with acute drug poisoning.	PLR-13, 23
<i>Sk-9</i>	Ability to fill in a printed and electronic card, regarding unwanted side effects of drugs and to assist in their detection.	PLR-14
<i>Sk-10</i>	The ability to prescribe prescriptions of medicines.	PLR-14
<i>C-1</i>	Ability to maintain medical documentation.	PLR-14
<i>C-2</i>	Processing of medical information from different sources using knowledge of state and foreign languages.	PLR-14
<i>AB-1</i>	Ability to act socially responsibly and consciously.	PLR-16-21
<i>AB-2</i>	Ability to work in a team.	PLR-16
<i>AB-3</i>	Ability to act on the basis of ethical considerations.	PLR-19

#### 6. Format and volume of the course

Course format (specify full-time or part-time)	full-time	
Type of classes	Number of hours	Number of groups
lectures	-	
practical	20	
seminars	-	
independent work	10	

#### 7. Topics and content of the course

Type of lesson code	Topic	Learning objectives	Learning result code	Teacher
P-1	Subject and objectives of clinical pharmacology. The main provisions of pharmacokinetics and pharmacodynamia	Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems,	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi

	<p>cs Interaction of drugs, types of side effects of drugs, complications of drug therapy.</p>	<p>theoretical survey, formation of professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.</p>		<p>Assist. of prof . Kh. Kozlovska Teacher, Dunets Julia</p>
<p>P-2</p>	<p>Clinical and pharmacological characteristics of antianginal and anti-ischemic medicines.</p>	<p>Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.</p>	<p>Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.</p>	<p>Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof . Kh. Kozlovska Teacher, Dunets Julia</p>



		tic tasks, curation of specialized patients.		
P-3	Clinical and pharmacological characteristics of drugs affecting the ability of blood to coagulate.	Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia
P-4	Clinical and pharmacological characteristics of drugs affecting vascular tone.	Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of professional skills and skills (correction of prescriptions, control of	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia

		determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.		
P-5	6. Clinical and pharmacological characteristics of drugs affecting bronchial patency. Antihistamines.	Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovskaya Teacher, Dunets Julia
P-6	Clinical and pharmacological characteristics of antibacterial	Checking the mastering of the list of questions on	Kn-1-7; Sk-1-10;	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko

	drugs.	the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.	C-1, 2; AR-1-3.	Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia
P-7	Clinical and pharmacological characteristics of antibacterial drugs.	Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia

		side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.		
P-8	Clinical and pharmacological characteristics of local anesthetics and antiseptics.	Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovskaya Teacher, Dunets Julia
P-9	Anti-inflammatory drugs (steroid and non-steroid).	Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovskaya

		<p>professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized patients.</p>		<p>Teacher, Dunets Julia.</p>
<p>P-10</p>	<p>Clinical and pharmacological characteristics of medicines affecting bone metabolism and mineralization of enamel.</p>	<p>Checking the mastering of the list of questions on the topic of the lesson; solution of test tasks, situational problems, theoretical survey, formation of professional skills and skills (correction of prescriptions, control of determination by the student of group belonging of drugs, basic indications for the prescription of drugs), possible side effects of medicines and their correction, solution of pharmacotherapeutic tasks, curation of specialized</p>	<p>Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.</p>	<p>Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia</p>

		patients.		
IW-1	Preparation for practical training on the topic of №1.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia
IW-2	Preparation for practical training on the topic of №2.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia
IW-3	Preparation for practical training on the topic of №3.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia

IW-4	Preparation for practical training on the topic of №4.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia
IW-5	Preparation for practical training on the topic of №5.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia
IW-6	Preparation for practical training on the topic of №6.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia
IW-7	Preparation for practical training on the topic of №7.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi

		certain medicines, writing abstracts, preparation of presentations.		Assist. of prof . Kh. Kozlovska Teacher, Dunets Julia
IW-8	Preparation for practical training on the topic of №8.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof . Kh. Kozlovska Teacher, Dunets Julia
IW-9	Preparation for practical training on the topic of №9.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof . Kh. Kozlovska Teacher, Dunets Julia.
IW-10	Preparation for practical training on the topic of №10.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof . Kh. Kozlovska Teacher, Dunets Julia.
IW-11	Clinical and pharmacological characteristics of antiarrhythmic drugs. Clinical and	Independent study of theoretical material, study of literary sources, solving test problems and	Kn-1-7; Sk-1-10;	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva



	pharmacological characteristics of medicines affecting lipid metabolism.	clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	C-1, 2; AR-1-3.	Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia.
IW-12	Clinical and pharmacological characteristics of medicines affecting the functions of the digestive canal.	Independent study of theoretical material, study of literary sources, solving test problems and clinical problems from the methodological base, training of writing recipes for certain medicines, writing abstracts, preparation of presentations.	Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.	Prof. Eugene Pleshanov Assoc. prof. Marta Hotsko Assoc. prof. Kh. Moskva Assist. of prof. O. Lishuk Assist. of prof. M. Krasnyi Assist. of prof. Kh. Kozlovska Teacher, Dunets Julia.
<b>1. Verification of learning results</b>				
<b>Current control</b>				
<i>It is carried out during training sessions and aims to check the students' learning material (it is necessary to describe the forms of current control during training). Forms of evaluation of current educational activities should be standardized and include control of theoretical and practical training. The final assessment for the current educational activity is exhibited on a 4-point (national) scale</i>				
<b><i>Learning results code</i></b>	<b><i>Code of the type of the classes</i></b>	<b>Method of verification of learning results</b>	<b>Assessment criteria</b>	

<p>Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.</p>	<p>P-1 P-2 P-3 Pr-4 Pr-5 Pr-6 Pr-7 Pr-8 Pr-9 Pr-10</p>	<p>The types of educational activities of students according to the curriculum are: a) lectures, b) practical classes, c) independent work of students (ISW), the organization of which has a significant role in the consultation of teachers. Thematic plans of lectures, practical lessons, ISW provide implementation in the educational process of all topics that are part of the content of the program.</p> <p><b>The lecture course</b> consists of 4 lectures. The topics of the lecture course reveal the problematic issues of the relevant</p>	<p><b>Excellent ("5")</b> – the student answered correctly 90-100% of the A format test (from the database "Step-2"). Correctly, clearly, logically corresponds to all standardized questions of the current topic. Closely binds theory with practice and demonstrates the correct implementation of practical skills. Fluent in interpretation of the laboratory test results, adept at prescribing appropriate examination methods. Makes differential diagnosis. Solves clinical case with higher level of difficulty and knows how to compile the material.</p> <p><b>Good ("4")</b> - the student answered correctly 70-89% of the of A format test (from the database "Step-2"). Correctly and essentially responds to all standardized questions of the current topic. Demonstrates knowledge of practical skills. Correctly uses theoretical knowledge in solving practical problems, conducts a differential diagnosis. Capable to solve easy and medium complexity clinical cases. Possesses all necessary practical skills and techniques to perform their uses, more than the required minimum.</p> <p><b>Satisfactory ("3")</b> - the student answered correctly 50-69% of the A format test (from the database "Step-2"). Incomplete, with the help of additional questions answers all the standardized questions on the current topic. Cannot independently make a clear logical answer. While the student is answering and demonstrating practical skills, he makes mistakes. Can solve only the easiest situational tasks. Has knowledge of only the minimum methods of investigations.</p> <p><b>Unsatisfactory ("2")</b> - the student answered correctly 50% of the test of A format. Does not know the material of the current topic, cannot build a logical response, does not respond to additional questions, and does not understand the content of the material. Makes significant, gross mistakes when answering and demonstrating practical skills. The student can work off the missed topics or reassign them to the teacher during his consultations (individual work with students) no more than 3 times during the study of the discipline, thus gaining a number of points not less than the minimum to be admitted to the final control.</p>
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	<p>IW-1</p> <p>IW-2</p> <p>IW-3</p>	<p>sections of endocrinology. During the lectures, students develop theoretical basic knowledge, provide a motivational component and a general-oriented stage of mastering scientific knowledge during the independent work of students. The lecture course uses a variety of tools - multimedia presentations, slides, demonstration of thematic patients.</p> <p><b>Practical classes</b> are clinical, aimed at controlling the assimilation of theoretical material and the formation of practical skills, as well as the ability to analyze and apply the</p>	
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<p>Kn-1-7; Sk-1-10; C-1, 2; AR-1-3.</p>	<p>IW-4 IW-5 IW-6 IW-7 IW-8 IW-9 IW-10</p>	<p>obtained knowledge to solve practical problems, are conducted in the departments of clinical bases of the department .</p> <ul style="list-style-type: none"> <li>• Each lesson starts with test control to assess the initial level of knowledge and determine the degree of readiness of students for the lesson. The teacher determines the purpose of the lesson and creates a positive cognitive motivation ; answers questions of students who arose during the SRS on the topic of the lesson.</li> <li>• The main stage of the lesson is the practical work of the student</li> </ul>	
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	<p>at the bed of the patient. The teacher and students bypass the sick. Students examine patients, collect history, examine them, perform diagnostic manipulations, etc. Control of the main stage of the lesson is carried out by assessing the performance of practical skills by the student, the ability to solve typical situational problems. The teacher discusses and gives an explanation, emphasizes the peculiarities of the course of the disease in a particular child, aims at a more rational conduct of</p>	
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		<p>a particular method of examination, etc.</p> <p>In addition, practical classes include:</p> <ul style="list-style-type: none"><li>- planning of the patient's examination;</li><li>- interpretation of laboratory and instrumental research data;</li><li>- differential diagnosis of the main diseases of the endocrine system in a typical or complicated course;</li><li>- determination of preliminary clinical diagnosis;</li><li>- definition of therapeutic tactics;</li><li>- prescription of medical nutrition;</li><li>- emergency medical care;</li><li>- solution of situational</li></ul>	
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		<p>problems;</p> <ul style="list-style-type: none"><li>- working out practical skills at the bed of the patient;</li><li>- maintenance of medical documentation.</li></ul> <ul style="list-style-type: none"><li>• At the final stage of the lesson to assess the student's mastering of the topic, he is invited to answer situational problems. The teacher summarizes the lesson, gives students tasks for independent work, points to the nodal issues of the next topic and offers a list of recommended literature for self-study.</li></ul> <p>The duration of one practical lesson topic is 4.0</p>	
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	academic hours.	
	<p><b>Independent work</b> of students, which is provided in the topic along with the audit, including filling in workbooks, is evaluated during the current control of the topic at the appropriate lesson</p> <p><b>Individual work</b> is taken into account when evaluating for practical lessons under conditions of successful implementation and protection.</p>	
<b>Final control</b>		
<i>General evaluation system</i>	Participation in the semester - 100% on a 200-point scale	
<i>Rating scales</i>	traditional 4-point scale, multifunctional (200-point) scale, ECTS rating scale	
<i>Admission to final credit</i>	The student attended all practical (laboratory, seminar) classes and received at least 120 points for current success	
<i>Type of final control</i>	Methodology of final	Enrollment criteria



	control	
<b>Differentiated credit</b>	The semester test is issued according to the results of the current control.	A semester test is a form of final control, which consists in assessing the student's mastering of the discipline's educational material solely on the basis of the results of performing all types of educational work provided for by the curriculum.

In order to intensify the educational process, systematically assimilate educational material, establish feedback with each student, timely control and correction of the educational process, increase motivation, reduce the omissions of educational classes, students' responsibility for the results of educational activities, the success of each student is evaluated according to the rating system.

**Evaluation** is one of the final stages of educational activity and determining the success of learning. The discipline score is set as an average of grades for current educational activities, which is exhibited when evaluating theoretical knowledge and practical skills in accordance with the lists determined by the discipline program.

**The current educational activities** of students are monitored in practical classes in accordance with specific goals. Recommended for use are the following means of diagnostics of the level of preparation of students: test control (machine and machine-based), solution of situational problems, control of practical skills, in particular - the ability to properly conduct the patient's curation, assign and interpret the results of laboratory and instrumental examination, justify the diagnosis on the basis of analysis of clinical and auxiliary methods of examination.

When evaluating the assimilation of each topic of the module, students are given grades on a 4-point (traditional) scale using the criteria of evaluation adopted in universities and approved by the cycle medical commission. This takes into account all types of work provided for by methodological development for the study of the topic.

The student can work out the missed topics during the debuts no more than 3 times during the study of the subject, thereby gaining the number of points not less than the minimum to get a score from the discipline. Evaluation of current educational activities: carried out at each practical lesson on the relevant topic and has a definition according to the ESTS system and the traditional scale adopted in Ukraine

When assimilating each topic for the current educational activity, the student is given grades on a 4-point traditional scale, then for each student his average score is calculated for the discipline and according to Table 1 "Instructions for assessing the educational activities of students..." is converted to the appropriate points."

The calculation of the number of points for the current training is carried out on the basis of the grades received by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic (CA) mean, rounded to 2 characters after the decimal point. The resulting value is converted to points on a multi-point scale as follows:

$$X=(CA \times 200):5$$

#### ***Evaluation of individual tasks of the student.***

The independent work of students, which is provided in the topic along with the audit work, is evaluated during the current control of the topic at the appropriate lesson. The assimilation of topics, which are made only for independent work, is controlled at the credits lesson. The implementation of individual tasks is taken into account when deriving an assessment for a practical lesson in the conditions of their successful execution and protection. In no case can the total score for the current training activity not exceed 200 points.

**Final control.** A semester test is a form of final control, which consists in assessing the student's mastering of the discipline's educational material solely on the basis of the results of performing all types of educational work provided for by the curriculum. The semester test is issued according to the results of the current control.

The assessment of the student's achievement in the discipline is rating and is set on a multi-scale as an average arithmetic assessment of the assimilation of the corresponding modules and has a definition by the ESTS

system and the traditional scale adopted in Ukraine.

#### Correspondence of discipline evaluation in grading scores in traditional assessments

Evaluation on a 200 point scale	ECTS Score	Rating for four-point (national) scale
170–200	A	Excellent
160–169	B	Good
140–159	C	Good
130–139	D	Satisfactory
120–129	E	Satisfactory
Less than 120	F, Fx	Unsatisfactory

After completing the study of the discipline, the responsible for organizing the educational and methodological work at the department or the teacher puts the student the number of points and the corresponding score in the credits book and fills in the information of the success of students from the discipline in the form of Y-5.03B - test.

#### 9. Course Policy

The policy of the discipline is determined by the system of requirements for the student in the study of the discipline "Clinical Pharmacology" and is based on the principles of academic integrity. Students are explained by the value of acquiring new knowledge, academic norms that need to be followed, why they are important, what is academic integrity, what are its values and functions, how students can contribute to its development by their actions; the essence, peculiarities and causes of inadmissibility of academic plagiarism are explained, they encourage higher education applicants to independently perform educational tasks, correctly refer to sources of information in case of borrowing ideas, statements, information.

The policy of the course is:

**compulsory observance of academic integrity by students, namely:**

- independent execution of all types of pobits, tasks, forms of control provided for by the working program of this discipline;
- links to sources of information in case of use of ideas, developments, statements, information;
- compliance with copyright and cymbal law;
- providing reliable information on the results of their own educational (scientific) activities, methods of research and sources of information used.

**adherence to the principles and norms of ethics and deontology by applicants of higher education:**

- actions in professional and educational situations from the position of academic integrity and professional ethics and deontology;
- compliance with the rules of the internal procedure of the clinical base of the department, to be tolerant, friendly and balanced in communication with students and teachers, patients, medical staff of healthcare institutions;
- awareness of the significance of examples of human behavior in accordance with the norms of academic integrity and medical ethics.

**attendance of classes by students of higher education:**

- presence at all classes is mandatory for the purpose of current and final assessment of knowledge (except for

cases for a valid reason).

**overpayment of topics and development of missed classes by students of higher education:**

- training of missed classes takes place according to the schedule of testing

- reassignment of the topic of the lesson, for which the student received a negative assessment, is carried out at a convenient time for the teacher and the student outside the classes, the maximum assessment is "good"

re-assignment of the topic during the current training and final control in order to improve the assessment is not allowed

**10. References**

**Mandatory:**

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3. Залюбовська О.І., Коваль С.М., Литвинова О.М. Клінічна фармакологія., Підручник. - Х.: Видавничий дім «ІНЖЕК» 2003. - 688 с.
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5. Клінічна фармакологія: Підручник / О.М. Біловол, О.Ф. Возіанов, Латогуз, В.Ф.Москаленко, А.Я. Циганенко; За ред. О.М. Біловола, І.К.Латогуза і А.Я. Циганенка: У 2 т. – К.: Здоров'я, 2005. – Т.1.- 608 с.; Т.2 –684 с.
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9. Клиническая фармакология: / С.В.Налетов, И.А.Зупанец, Т.Д.Бахтеева и др. Харьков: Узд-во НФаУ: Золотые страницы, 2005. - 448с.
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11. Машковский М.Д. Лекарственные средства: В 2 т. – М.: Новая волна, 2014. – 1216 с.
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**Additional:**

1. Внутрішня медицина: Порадник лікарю загальної практики: навчальний посібник. / А.С. Свінцицький, О.О. Абрагамович, П.М. Боднар та ін.; За ред. проф. А.С. Свінцицького. – ВСВ «Медицина», 2014. – 1272 с. + 16с. кольоров. вкл.
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5. Наказ МОЗ України № 436 від 03.07.2006 «Про затвердження клінічних протоколів надання медичної допомоги за спеціальністю «Кардіологія».
6. [Наказ МОЗ України №430 від 03.07.2006 р. Про затвердження протоколів надання медичної](#)

допомоги за спеціальністю «Анестезіологія та інтенсивна терапія»

7. Наказ МОЗ України від 23.05.2011 р. №816 «Про затвердження та впровадження медико-технологічних документів зі стандартизації медичної допомоги на засадах доказової медицини. Уніфікований клінічний протокол медичної допомоги «Ішемічна хвороба серця: стабільна стенокардія напруги. Первинна медична допомога».
8. Наказ МОЗ України від 24.05.2012 р. №384 «Про затвердження та впровадження медико-технологічних документів зі стандартизації медичної допомоги при артеріальній гіпертензії». Уніфікований клінічний протокол первинної, екстреної та вторинної (спеціалізованої) медичної допомоги «Артеріальна гіпертензія».
9. Наказ МОЗ України від 15 січня 2014 р. № 34 «Про затвердження та впровадження медико-технологічних документів зі стандартизації екстреної медичної допомоги «Гіпертонічний криз», ««Раптова серцева смерть», «Гостра дихальна недостатність», «Гіповолемічний шок», «Гострі отруєння», «Тромбоемболія легеневої артерії».
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11. Наказ МОЗ України від 15.06.2016р. №597 «Про затвердження та впровадження медико-технологічних документів зі стандартизації медичної допомоги при фібриляції передсердь».
12. Наказ МОЗ України від 13.06.2016р. N 564 «Про затвердження та впровадження медико-технологічних документів зі стандартизації медичної допомоги в частині профілактики серцево- судинних захворювань».
13. Наказ МОЗ України від 02.03.2016р. № 152 «Про затвердження та впровадження медико-технологічних документів зі стандартизації медичної допомоги при стабільній ішемічній хворобі серця»;
14. Наказ МОЗ України від 03.03.2016р. N 164 «Про затвердження та впровадження медико-технологічних документів зі стандартизації медичної допомоги при гострому коронарному синдромі без елевації сегмента ST».
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**Information resources:**

1. [www.studmedlib.ru](http://www.studmedlib.ru)
2. [www.Med-Tutorial.ru](http://www.Med-Tutorial.ru)
3. [www.Med-books.by](http://www.Med-books.by)
4. Migregional Society of Evidence-Based Medicine Specialists: <http://www.osdm.org/index.php>
5. Bulletin of Evidence-Based Medicine: <http://www.evidence-update.ru>
6. European Society of Clinical Pharmacologists and Pharmacotherapists: <http://www.eacpt.org>
7. Resource for the interaction of medicines: <http://medicine.iupui.edu/flockart/>

**11. Equipment, logistics and software of the subject / course**

Multimedia projector  
Computers  
Overhet  
Work program of the discipline

Plans of lectures, practical classes and independent work of students  
Methodical instructions for practical lessons for students  
Methodical instructions for practical training for teachers  
Methodological materials that ensure independent work of the student  
Test and control tasks for practical classes  
Situational tasks for practical classes  
Virtual history of diseases  
List of medicines for study  
List of questions to control the success of training, which are put on practical lessons

#### **12. Additional information**

In charge for academic work: Oksana Safonova, tel. (032)2759510

In charge for students scientific circle: Orysia Lischuk, tel. (032) 2759510.

Materials related to the educational and organizational process (thematic plan, schedule of classes, schedules of consultations and work up of missed classes) are available on the website of the department: (<https://new.meduniv.lviv.ua/kafedry/kafedra-endokrynologiyi/>). Besides, all materials are on platform MISA (<http://misa.meduniv.lviv.ua/login/index.php>).

Addresses of the practical classes locations:

№1: "Lviv Regional State Clinical Treatment and Diagnostic Endocrinology Center", 79010, Lviv, 1, Ostrozkoho str.; tel/: (032) 276-46-73; 275-95-10 (main base), teachers: Oleksandr Serhiyenko, Olesia Kikhtiak, Victoria Serhiyenko, Marta Hotsko, Oksana Safonova, Khrystyna Moskva, Halyna Suslyk, Orysia Lischuk, Dunets Julia Viktorivna.  
Lviv city clinical hospital №4», Endocrinology department, 79011, Lviv, st. Svetsitsky, 3, tel. (032) 276-02-74, teachers: Eugene Pleshanov, Mykhailo Krasnyi, Khrystyna Kozlovska, Dunets Julia Viktorivna.

Lectures are held on the basis of the department at: Lviv, Ostrozkoho 1 str.

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