

MINISTRY OF HEALTH OF UKRAINE  
KHARKIV NATIONAL MEDICAL UNIVERSITY  
Department of Clinical Pharmacology and Internal Medicine

Academic year 2021-2022

**SYLLABUS OF EDUCATIONAL COURSE  
«PHYTOTHERAPY»**

Elective component

Form of education: full-time, distance, mixed

Branch of knowledge 22 "Health Protection"

Speciality 222 "Medicine"

Educational program for education of specialists of the second (master's)  
level of higher education course

Course of education 4

Syllabus of the academic discipline was  
approved at the meeting of the  
Department of Clinical Pharmacology  
and Internal Medicine

Approved by the KhNMU  
Methodological Commission on the  
therapeutic disciplines

Protocol from  
"27" August 2021 No. 1

Protocol from  
"31" August 2021 No. 1

The head of the Department of Clinical  
Pharmacology and Internal Medicine

The head of the Methodological  
Committee of the KhNMU on the  
therapeutic disciplines



(signature)

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Full-time consultations schedule and place according to the schedule of the department.

On-line consultations, schedule and place by prior arrangement with the teacher.

Location: classes are held on the base of the polyclinic Government Institution "L.T. Malaya Therapy National Institute of the National Academy of Medical Sciences of Ukraine" (GI "L.T. Mala NIT NAMSU") (Lyubov Malaya Avenue, 2A, Kharkiv, Kharkiv region, 61039)

## INTRODUCTION

The syllabus of the discipline "Phytotherapy" is compiled in accordance with the educational-professional program (hereinafter - EPP) 222 "Medicine" and the Standard of Higher Education of Ukraine (hereinafter - the Standard), the second (master's) level, field of knowledge 22 "Health Protection".

The program of the course determines the prerequisites for access to learning, orientation and the main focus of the program, the amount of ECTS credits required to obtain an educational master's degree, a list of general and special (professional) competencies, the normative and variable content of specialist training, formulated in terms of learning outcomes and control requirements quality of higher education.

The department accepts qualified students of any race, national or ethnic origin, gender, age, persons with special needs, any religion, sexual orientation, gender identity, veteran status or marital status for all rights, privileges, programs and activities provided to university students.

**Course description (abstract).** The phytotherapy course is designed for 4th year medical students. Practical classes conducted during this course cover a wide range of important therapeutic and preventive measures carried out in a variety of pathologies. Phytotherapy is a method of treatment of various human diseases, based on the use of medicinal plants and complex drugs from them for the purpose of treatment and rehabilitation of patients, as well as disease prevention.

**The subject** of study of the discipline is the treatment of various human diseases, with the help of medicinal plants and complex drugs from them for the treatment and rehabilitation of patients, as well as disease prevention.

**Interdisciplinary links:** the study of the course "Phytotherapy" is based on the study of students of Latin, ethics, philosophy, ecology, medical biology, medical chemistry, biological and bioorganic chemistry, biophysics, human anatomy, pathological anatomy, physiology, pathological physiology, microbiology and integrates with these disciplines; lays the foundations for students to study clinical pharmacy and pharmacotherapy and the formation of skills to apply knowledge of pharmacology.

**Prerequisites** "Phytotherapy" normal anatomy, normal physiology, pathological physiology, medical genetics, biophysics, biochemistry, clinical biochemistry, microbiology, virology and immunology, infectious diseases, pharmacology, internal medicine, resuscitation, principles of evidence-based medicine.

**Postrequisites** "Phytotherapy" internal medicine, emergency and urgent medical care, infectious diseases, clinical immunology, clinical allergology, clinical pharmacology.

**Link to the page of the discipline in MOODLE:**

<http://distance.knmu.edu.ua/course/view.php?id=3195>

## 1. PURPOSE AND TASKS OF THE COURSE

**1.1. The purpose** of studying the discipline is to determine the directions and goals of pharmacological intervention in the conduct of phytotherapy of diseases of the internal organs. Definition of groups of drugs, the principle of selection of individual medicinal plants in a particular clinical situation. Improving the used and creating new methods of treating diseases. Principles of compilation of drug combinations taking into account the clinical course of diseases, as well as data on the pharmacokinetics and pharmacodynamics of medicinal plants. Principles of compilation of drug combinations taking into account the clinical course of diseases, as well as data on pharmacokinetics and pharmacodynamics of drugs. Improving the used and creating new methods of treating diseases.

**1.2. The main tasks** of studying the discipline are the acquisition by students of competencies in accordance with the general and professional competencies of the educational-professional program "Medicine" of the second (master's) level of higher education in 222 Medicine qualification Master of Medicine: to define key concepts of the discipline "Phytotherapy"; have knowledge of which biologically active substances are contained in medicinal plants, and what pharmacological effects they have; be able to choose phytomedicines of general and specific action depending on the existing clinical and functional disorders in patients with various pathologies, making an informed decision, the ability to work in a team, to act socially responsibly and consciously.

The curriculum combines only: 90 hours / 3 credits (practical classes - 20 hours, independent work - 70 hours).

The syllabus is organized with the application of modern pedagogical principles of organization of the educational process of higher education.

The discipline belongs to the elective disciplines.

The format of the discipline is mixed.

**1.3. Competences and learning outcomes**, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education, formulated in terms of learning outcomes in the EPP and Standard).

**1.3.1. The study of the discipline provides students with the acquisition of competencies:**

**Integral competencies.**

The ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or in the learning process, involves research and (or) implementation of innovations and is characterized by the complexity and uncertainty of conditions and requirements. The ability of an individual to organize an integral humanitarian educational space, to form a single image of culture or a holistic picture of the world.

**Common competencies**

CC 1 - Ability to abstract thinking, analysis and synthesis, the ability to learn and be modernly trained

CC 2 - Ability to apply knowledge in practical situations

- CC 3 - Knowledge and understanding of the subject area and understanding of professional activity
- CC 4 - Ability to adapt and act in a new situation
- CC 5 - Ability to make an informed decision; work in a team; interpersonal skills
- CC 6 - Ability to communicate in the state language both orally and in writing; ability to communicate in a foreign language
- CC 7 - Skills in the use of information and communication technologies
- CC 8 - Definiteness and persistence in terms of tasks and responsibilities
- CC 9 - Ability to act socially responsibly and consciously

### **Special competencies**

- SC 1 - Skills of interviewing of the patient
- SC 2 - Ability to determine the required list of laboratory and instrumental studies and evaluate their results
- SC 3 - Ability to establish a preliminary and clinical diagnosis of the disease
- SC 4 - Ability to determine the required mode of work and rest, the nature of nutrition in the treatment of diseases
- SC 5 - Ability to determine the principles and nature of treatment of diseases
- SC 6 - Ability to diagnose emergencies
- SC 7 - Ability to determine tactics and skills of emergency medical care
- SC 14 - Ability to keep medical records

### **1.3.2 The study of the discipline ensures that students acquire the following program learning outcomes**

- PLO 1 - to have general and special fundamental and professionally-oriented knowledge, skills, abilities, competencies necessary to perform typical professional tasks related to activities in the medical field in the relevant position
- PLO 3 - to apply the acquired knowledge, skills and understanding to solve typical problems of the doctor, the scope of which is provided by lists of syndromes and symptoms, diseases, emergencies, laboratory and instrumental research, medical manipulations
- PLO 4 - to collect information about the patient
- PLO N 7 - to determine the nature and principles of treatment of diseases
- PLO 17 - be able to keep medical records, process state, social and medical information
- PLO 20 - apply the acquired knowledge about the existing health care system to optimize their own professional activities and participate in solving practical problems of the industry
- PLO 21 - adhere to the code of ethics of the doctor, which ensures the formation of a specialist with appropriate person

### **1.3.3 The study of the discipline provides students with the following social skills (soft skills):**

Ability to abstract thinking, analysis and synthesis, the ability to learn and be modernly trained

Ability to apply knowledge in practical situations. Knowledge and understanding of the subject area and understanding of professional activity. Ability to adapt and act in a new situation. Ability to make an informed decision; work in a team; interpersonal skills. Ability to communicate in the state language both orally and in writing; ability to communicate in a foreign language. Skills in the use of information and communication technologies. Definiteness and persistence in terms of tasks and responsibilities. Ability to act socially responsibly and consciously. The desire to preserve the environment.

## 2. Information volume of the discipline

Name of indices	Branch of knowledge, direction of training, educational-qualification level	Characteristics of the course	
		Day tuition	
Number of credits – 3	Direction of training 22 «Health Protection»	Elective	
Total number of hours - 90	Specialty 222 «Medicine»	<b>Year of study:</b>	
		4-th	
		<b>Term</b>	
		7-th	8 - t h
Number of hours for day tuition: Practical classes – 20, Independent work - 70	Educational-qualification level: «second (master’s) level»	<b>Lectures</b>	
		0 hours	
		<b>Practical classes</b>	
		20 hours	
		<b>Independent work</b>	
		70 hours	
		Type of control: Credit	

### 2.1 Description of the discipline

**2.2.1 Lectures- not provided by the program.**

**2.2.2 Seminars- not provided by the program.**

**2.2.3 Practical classes.**

№	The topic practical lesson	Hours	Education methods	Methods of control

1.	<p>Topic 1. Definition of phytotherapy, its role and place in modern medicine. History of development, organization and general issues of phytotherapy. Mechanisms of therapeutic effect of phytotherapy.</p> <p>Topic 2. Phytotherapy drugs and methods of their application. Biologically active substances of medicinal plants and their importance in determining phytotherapeutic effects.</p>	2        3	<p>story- explanation, conversation, illustration, demonstration, presentation, videos, educational video films discussion</p>	<p>oral examination (individual and frontal); written survey; test control; creative tasks</p>
2.	<p>Topic 3. Dosage forms from plants. Requirements for medicinal plant raw materials. General principles of phytotherapy application</p> <p>Topic 4. Ways to use herbal remedies. Indications and contraindications to the inclusion of phytomedicines in the complex treatment of patients of different profiles. Phytomedicines of general action.</p> <p>Topic 5. Phytomedicines in complex treatment and medical rehabilitation of patients with pathology of the respiratory system.</p>	2        2        1	<p>story- explanation, conversation, illustration, demonstration, presentation, videos, educational video films discussion</p>	<p>oral examination (individual and frontal); written survey; test control; creative tasks</p>
3.	<p>Topic 6. Phytomedicines in the complex treatment and medical rehabilitation of patients with pathology of the cardiovascular system.</p> <p>Topic 7. Phytomedicines in complex treatment and medical rehabilitation of</p>	2       2	<p>story- explanation, conversation, illustration, demonstration, presentation, videos, educational</p>	<p>oral examination (individual and frontal); written survey; test control; creative tasks</p>



	patients with pathology of the digestive system.  Topic 8. Phytomedicines in complex treatment and medical rehabilitation of patients with pathology of the kidneys and urinary tract.	1	video films discussion	
4.	Topic 9. Phytomedicines in complex treatment and medical rehabilitation of patients with functional disorders of the nervous system  Topic 10. Phytomedicines in the complex treatment and medical rehabilitation of patients with some endocrine disorders.  Final lesson-credit.	2  2  1	story- explanation, conversation, illustration, demonstration, presentation, videos, educational video films discussion	oral examination (individual and frontal); written survey; test control; creative tasks
	<b>Total:</b>	<b>20</b>		

#### 2.2.4 Labs- not provided by the program.

#### 2.2.5 Independent work of students:

<b>№</b>	<b>The topic practical lesson</b>	<b>Hours</b>	<b>Education methods</b>	<b>Methods of control</b>
<b>1</b>	Preparation for practical classes - theoretical training	<b>10</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>2</b>	Topic 1 The role and place of phytotherapy in modern medicine, the mechanisms of therapeutic effect of phytotherapy.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports

<b>3</b>	Topic 2. Evaluation of pharmacological activity and components of medicinal plants	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>4</b>	Topic 3 Evaluation of phytotherapy drugs and methods of their application.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>5</b>	Topic 4. Dosage forms from plants and requirements for medicinal plant raw materials.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>6</b>	Topic 5. Ways to use herbal remedies.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>7</b>	Topic 6. Evaluation of phytomedicines in the complex treatment and medical rehabilitation of patients with pathology of the kidneys and urinary tract	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>8</b>	Topic 7. Evaluation of phytomedicines in complex treatment and medical rehabilitation of patients with diseases of the musculoskeletal system	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>9</b>	Topic 8 Evaluation of phytomedicines used in some skin diseases.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports

<b>10</b>	Topic 9. Evaluation of phytomedicines used in some disorders of the immune system and in neoplastic processes.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>11</b>	Topic 10 Evaluation of phytomedicines in the complex treatment and medical rehabilitation of patients with pathology of the blood system and affect hematopoiesis.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>12</b>	Topic 11. Evaluation of phytomedicines used in the absence of vitamins and minerals.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>13</b>	Topic 12. Evaluation of phytomedicines used in parasitic, helminthiasis and protozoal infections.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>14</b>	Topic 13. Potentially possible interactions between drugs and herbal medicines.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>15</b>	Topic 14. Features of phytotherapeutic drugs in patients of different ages.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	Preparing presentations, reports
<b>16</b>	Preparation for the final lesson.	<b>4</b>	Working with literature, viewing presentations, listening to lectures	
	<b>Total:</b>	<b>70</b>		

## **Teaching methods:**

### **Verbal**

Methods of educational and cognitive activity: explanatory-illustrative method, method of problem statement, partial-search method, research method.

Methods of stimulation and motivation of educational and cognitive activity: inductive and deductive methods of learning, methods of stimulation and motivation of learning.

Methods of control as teaching methods (control by the teacher, self-control, mutual control, self-correction, mutual correction).

### **Visual**

Demonstration of examination of medical history and / or letters of appointment, case studies, demonstration of illustrations, presentations, scales, tables, diagrams, algorithms, methods of monitoring the effectiveness and safety of drugs, demonstration of videos for practical classes, drug brochures according to the topic of practical training.

### **Practical methods**

Conducting clinical analysis of 1-2 patients according to the topic of the lesson, evaluation of the results of laboratory and instrumental research examinations, preparation and correction of the treatment plan in accordance with treatment standards, features of interaction of medicinal plants on the basis of personalized approach.

**Survey control methods** and testing of theoretical knowledge and practical skills,

- test control,
- situational clinically-oriented tasks,
- disputes

**Organization of current control.** Teachers make sure that each student receives the necessary competence in the areas included in the topics of practical classes. Assimilation of the topic (current control) is controlled in a practical lesson in accordance with specific goals. The following tools are used to assess the level of preparation of students: tests, solving situational problems, interpretation and evaluation of laboratory tests, methods of prescribing therapy, monitoring the acquisition of practical skills. Assessment of current learning activities in each practical lesson is carried out on the traditional 4-point scale: "excellent", "good", "satisfactory" and "unsatisfactory".

**Final control:** credit.

## **3. Assessment Policy**

**3.1 Current training activity.** Evaluation of the success of education of students is carried out on the basis of the current "Instructions for evaluating the educational activities of students of KNMU"

Teachers shall ensure that each master receives the necessary competences in the areas covered by the practical classes. Mastering the topic (current control) is

controlled by practical lessons according to specific goals, tests, solution of situational tasks, control of the acquisition of practical skills.

When assessing the mastering of each discipline subject (current training activity - CTA) and the final session (software), the master is awarded an assessment according to the traditional 4-point system: "excellent", "good", "satisfactory" and "unsatisfactory".

**Score from discipline.** The final lesson (FL) is conducted according to the program of the discipline during the semester on a schedule, during the classes. Assessment of the discipline is given to the master at the last (final) class. The total score for the CTA and the final lesson (FL) is defined as the arithmetic mean of the traditional scores for each lesson and the software, rounded to 2 decimal places (to the nearest hundredths), which are converted into points according to the "Instructions for Assessment of Master Learning Activities" Using *Table* or the average score (up to one hundredth) and its conversion to ECTS points is automatically obtained by the teacher through from the Electronic journal. The minimum number of points that a master must earn for his / her current activity while studying the discipline is 120 points, and the maximum number of points is 200 points.

The maximum number of points that a master can gain in studying the discipline is - 200, the minimum is 120 points. The type of final control is credit.

After completing the teaching of the discipline the master gets a credit.

**Assessment of masters' independent work.** Independent work of masters, which is provided by the topic of the lesson along with the classroom work, is assessed during the ongoing control of the topic at the relevant lesson.

Table 3

**Recalculation of the average for current activity in a multi-scale scale  
(for disciplines ending with credit)**

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	200	4.22-4,23	169	3.45-3,46	138
4.97-4,99	199	4.19-4,21	168	3.42-3,44	137
4.95-4,96	198	4.17-4,18	167	3.4-3,41	136
4.92-4,94	197	4.14-4,16	166	3.37-3,39	135
4.9-4,91	196	4.12-4,13	165	3.35-3,36	134
4.87-4,89	195	4.09-4,11	164	3.32-3,34	133
4.85-4,86	194	4.07-4,08	163	3.3-3,31	132
4.82-4,84	193	4.04-4,06	162	3.27-3,29	131
4.8-4,81	192	4.02-4,03	161	3.25-3,26	130
4.77-4,79	191	3.99-4,01	160	3.22-3,24	129
4.75-4,76	190	3.97-3,98	159	3.2-3,21	128
4.72-4,74	189	3.94-3,96	158	3.17-3,19	127

4.7-4,71	188	3.92-3,93	157	3.15-3,16	126
4.67-4,69	187	3.89-3,91	156	3.12-3,14	125
4.65-4,66	186	3.87-3,88	155	3.1-3,11	124
4.62-4,64	185	3.84-3,86	154	3.07-3,09	123
4.6-4,61	184	3.82-3,83	153	3.05-3,06	122
4.57-4,59	183	3.79-3,81	152	3.02-3,04	121
4.54-4,56	182	3.77-3,78	151	3-3,01	120
4.52-4,53	181	3.74-3,76	150	<b>Less 3</b>	<b>Not enough</b>
4.5-4,51	180	3.72-3,73	149		
4.47-4,49	179	3.7-3,71	148		
4.45-4,46	178	3.67-3,69	147		
4.42-4,44	177	3.65-3,66	146		
4.4-4,41	176	3.62-3,64	145		
4.37-4,39	175	3.6-3,61	144		
4.35-4,36	174	3.57-3,59	143		
4.32-4,34	173	3.55-3,56	142		
4.3-4,31	172	3.52-3,54	141		
4,27-4,29	171	3.5-3,51	140		
4.24-4,26	170	3.47-3,49	139		

**Correspondence of discipline  
assessment in pointsassessment  
in ECTS and traditional  
assessment**

Assessment of discipline in points	Assessment on the ECTS scale	Traditional assessment from the discipline
180–200	A	5
160–179	B	4
150–159	C	4
130–149	D	3
120–129	E	3
Less 120	F, FX	2

**3.2. Questions for credit.**

1. Define the term "Phytotherapy".

2. A brief history of herbal medicine.
3. List the schools that have survived to our time.
4. Describe the place of phytotherapy in the general system of treatment of patients.
5. List the theoretical foundations of herbal medicine, its basic principles and rules.
6. What are the main mechanisms of therapeutic effect of phytopreparations?
7. Name the main functions of medicinal plants.
8. Specify the rules of harvesting, primary processing, drying and storage of medicinal plant raw materials (LRS).
9. Define the concept of "standardization".
10. List the categories of AND on LR and LRS
11. Name the main methods of herbal medicine.
12. Name the substances belonging to the biologically active compounds of primary metabolism.
13. Terpenes, their importance in determining phytotherapeutic effects.
14. List the main properties of iridoids.
15. Name the spectrum of pharmacological activity of flavonoids.
16. What indications and contraindications are known for coumarins?
17. List the main therapeutic effects of essential oils.
18. Vitamins as physiologically active substances of phytotherapeutic agents.
19. List the main dosage forms of plants.
20. What is the difference between decoction and tea?
21. Is it possible to prepare tinctures or extracts at home, equivalent to the same industrial production?
22. Napar. Definition, method of preparation.
23. Tincture, extract. The difference and method of preparation.
24. The concept - medicinal plant raw materials.
25. What are the requirements for the procurement of medicinal plant raw materials?
26. General principles of phytotherapy and their practical significance.
27. What is pharmacognostic analysis?
28. Describe the principle of phasing.
29. List the main dosage forms of plants.
30. List the methods of administration of phytopreparations.
31. Inhalation, definitions, examples.
32. Name the main options for oral use of herbal medicines.
33. Enteral use of phytopreparations (infusions, decoctions, infusions, tinctures, juices, oils, encapsulated forms).
34. Name the main contraindications and indications for phytotherapeutic treatment.
35. Formulate the basic rules of taking herbal baths.
36. List the main requirements for the selection of basic raw materials for phytocompositions of phytopreparations.
37. Name the requirements for the number of ingredients collected.

38. Name the principle of selection of auxiliary raw materials.
39. Name the medicinal plants used to treat ARI.
40. Name the herbs used to treat bronchitis.
41. Name the medicinal plants used to treat pneumonia.
42. What is the role of herbal medicine in the prevention and treatment of diseases of the upper respiratory tract?
43. Violet is fragrant as a medicinal plant.
44. What plants are used to treat sore throat?
45. Marshmallow root as a medicinal plant.
46. Name the main groups of medicinal plants that act on the cardiovascular system.
47. Name the herbs used to treat heart failure.
48. Name the medicinal plants used to treat hypertension.
49. Name the medicinal plants used to treat atherosclerosis.
50. Name the herbs used to treat coronary heart disease.
51. Name the medicinal plants used to treat hypotension.
52. Name the herbs used to treat arrhythmias.
53. Name the medicinal plants used to treat myocarditis, pericarditis and endocarditis.
54. Name the main groups of medicinal plants that act on the digestive system.
55. Name the herbs used to treat gastritis.
56. Name the herbs used to treat colitis.
57. Name the medicinal plants used to treat chronic hepatitis.
58. Name the medicinal plants used to treat gallstones.
59. Name the medicinal plants used to treat intestinal dyskinesia.
60. Name the herbs used to treat peptic ulcer of the stomach and duodenum.
61. Name the medicinal plants used to treat cirrhosis of the liver.
62. Name the main groups of medicinal plants that act on the kidneys and urinary tract.
63. Name the medicinal plants used to treat pyelonephritis.
64. Name the medicinal plants used to treat chronic diffuse glomerulonephritis.
65. Name the medicinal plants used to treat nephrolithiasis.
66. Name the medicinal plants used to treat cystitis.
67. Name the herbs used to treat chronic prostatitis.
68. Name the main groups of medicinal plants that act on the nervous system.
69. Name the herbs used to treat pain and migraines.
70. Name the herbs used to treat dizziness.
71. Name the medicinal plants used to treat neurosis and insomnia.
72. Name the medicinal plants used to treat neurocirculatory dystonia.
73. Name the medicinal plants used to treat brain disorders.
74. Name the herbs used to treat depression.
75. Basic principles of phytotherapy of diabetes mellitus.



76. Phytotherapy in complex treatment and medical rehabilitation of patients with some endocrine disorders.

77. Name the herbs used to treat obesity.

### **.3. Control questions**

**Consists in methodical recommendations from each lesson.**

### **3.4. Individual tasks**

Preparation for a practical lesson. Writing essays, preparing presentations on a particular topic.

**Assessment of individual tasks** of the masters is carried out under the conditions of the teacher's tasks (report of a lecture at a practical lesson, a report with a presentation at a practical lesson, a report at scientific and practical conferences of the department, university, writing abstracts, articles, participation in the All-Ukrainian Olympiad). Points (no more than 10) are added as an incentive extra point to the final grade for the current learning activity. The total amount of points for the current educational activity may not exceed 200 points.

### **3.5. Rules for appealing the assessment**

According to the provision on the appeal of the results of the final control of students of KhNMU

[http://files.knmu.edu.ua:8181/upload/redakt/doc\\_uchproc/polog\\_apel.pdf](http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_apel.pdf)

## **4. Course politics.**

### **Academic expectations of students and female students. Course requirements.**

Students are expected to attend all practical classes. If they missed classes, it is necessary to complete it (according to the schedule at the information stand of the department).

Written and homework assignments must be completed in full and on time, if students have questions, they can contact the teacher personally.

In order to achieve the learning goals and successfully complete the course, it is necessary: from the first day to join the work; read the material beforehand before considering it in a practical session; not to be late or miss classes; to come to the department dressed in a medical gown, to have replaceable shoes, to have a notebook, a pen; complete all necessary tasks and work daily; be able to work with a partner or as part of a group; seek help and receive it when you need it.

### **Practical classes**

Active participation in the discussion in the classroom, students / female students should be ready to understand in detail the material, ask questions, express their point of view, discuss. During the discussion, the following are important:

- respect for colleagues,

- tolerance towards others and their experiences,
- sensitivity and impartiality,
- the ability to disagree with opinions, but respect the personality of the opponent,
- careful argumentation of your opinion and the courage to change your position under the influence of evidence,
- “I am” a statement when a person avoids unnecessary dressing up, describes his feelings and formulates his wishes based on his own thoughts and emotions,
- compulsory acquaintance with primary sources.

Creative approach in its various forms is encouraged. Students are expected to be interested in participating local, all-Ukrainian and international conferences, competitions and other events with a subject profile.

Students can discuss various tasks, but their implementation is strictly individual. Cheating, using various software tools, prompts, using a mobile phone, tablet or other electronic gadgets during the class for purposes not related to the educational process are not allowed. Students are not allowed to be late for practical classes.

Visiting patients during supervision in the hospital is possible, provided that students have the appropriate uniform.

Students with special needs can meet with the teacher or warn him before the start of classes, at the request of the student this can be done by the head of the group. If you have any questions, please contact the teacher.

Students are encouraged to participate in scientific research and conferences on this topic.

All students of KNMU are protected by the Regulation on the Prevention, Prevention and Management of Cases of Sexual Harassment and Discrimination at Kharkiv National Medical University, designed to determine an effective mechanism for resolving conflict situations related to discrimination and sexual harassment. This Regulation was developed on the basis of such regulatory legal acts of Ukraine: the Constitution of Ukraine; Law of Ukraine "On Education"; Law of Ukraine "On Higher Education"; Law of Ukraine "On the principles of preventing and combating discrimination in Ukraine"; Law of Ukraine "On ensuring equal rights and opportunities for women and men"; Convention for the Protection of Human Rights and Fundamental Freedoms; The Convention against Discrimination in Education; The Convention on the Elimination of All Forms of Discrimination against Women; General Recommendation No. 25 to article 4, paragraph 1, of the Convention on the Elimination of All Forms of Discrimination against Women; General Comment No. 16 (2005) “Exactly for men and women the right to enjoy economic, social and cultural rights” (Article 3 of the International Covenant on Economic, Social and Cultural Rights; UN Committee on Economic, Social and Cultural Rights) Recommendations on education in the spirit international understanding, cooperation and peace and education in the spirit of respect for human rights and fundamental freedoms (UNESCO) Concept of the State social program for ensuring equal rights and opportunities for women and men for the period until 2021. Kharkiv

National Medical University provides education and employment free from discrimination, sexual harassment, intimidation or exploitation. The university recognizes the importance of confidentiality. All persons responsible for the implementation of this policy (employees / -these dean's offices, faculties, institutes and the Center for Gender Education, members of the student government and ethics committee, vice-rector for scientific and pedagogical work) respect the confidentiality of persons who report or are accused of discrimination or sexual harassment (excluding situations where legislation requires the disclosure of information and / or when disclosure of circumstances by the University is necessary to protect the safety of others).

KNMU creates a space of equal opportunities, free from discrimination of any national, racial or ethnic origin, gender, age, disability, religion, sexual orientation, gender, or marital status. All rights, privileges, programs and activities that are granted to students / female students or university staff apply to all, without exception, subject to proper qualifications. The anti-discrimination policy and the policy of counteracting sexual harassment of KNMU is confirmed by the Code of Corporate Ethics and the Charter of KNMU.

### **Classroom Behavior (Basic "yes" and "no")**

It is important for students to follow the rules of proper conduct at the university. These rules are general for everyone, they also apply to the entire faculty and staff, and do not fundamentally differ from generally accepted norms.

During classes it is not prohibited:

- to leave the audience for a short time if necessary and with the permission of the teacher;

- drink soft drinks;

- take pictures of presentation slides;

- actively participate in the lesson

Prohibited:

- to eat (except for persons whose special medical condition requires another - in this case, medical confirmation is required)

- to smoke, consume alcoholic and even low-alcohol drinks or drugs;

- to use obscene language or use words that offend the honor and dignity of colleagues and faculty;

- to play gambling;

- to damage the material and technical base of the university (damage inventory, equipment; furniture, walls, floors, litter premises and territories)

- to make noise, shout or listen to loud music in classrooms and even corridors during class.

### **Occupational Safety and Health**

At the first class of the course, the basic principles of labor protection will be explained by conducting appropriate instructions. It is expected that each and every one should know where the emergency exit closest to the audience is, where the fire extinguisher is located, how to use it, and the like.

**The procedure for informing about changes in the Syllabus:** the necessary changes in the Syllabus are approved by the methodological commission of the KNMU on the problems of professional education of the surgical profile and are published on the website of the KNMU, the website of the Clinical pharmacology department of the KNMU.

### **5. Academic integrity.**

The Department of Clinical Pharmacology and Internal Medicine maintains zero tolerance for plagiarism.

This position grounded at the requirements of Regulations on Academic Integrity and Ethics of Academic Relations at Kharkiv National Medical University

[http://files.knmu.edu.ua:8181/upload/redakt/doc\\_uchproc/polog\\_ad\\_etyka\\_text.pdf](http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_ad_etyka_text.pdf)

Regulations on the Commission on Academic Integrity, Ethics and Conflict Management of KhNMU

[http://files.knmu.edu.ua:8181/upload/redakt/doc\\_uchproc/polog\\_komis\\_ad\\_text.pdf](http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_komis_ad_text.pdf)

ACADEMIC INTEGRITY:

[http://www.knmu.kharkov.ua/index.php?option=com\\_content&view=article&id=2520%3A2015-04-30-08-10-46&catid=20%3A2011-05-17-09-30-17&Itemid=40&lang=uk](http://www.knmu.kharkov.ua/index.php?option=com_content&view=article&id=2520%3A2015-04-30-08-10-46&catid=20%3A2011-05-17-09-30-17&Itemid=40&lang=uk)

[http://files.knmu.edu.ua:8181/upload/redakt/doc\\_uchproc/kodex\\_AD.docx](http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/kodex_AD.docx)

In the first lessons, informational events will be held on what exactly is considered plagiarism and how to correctly carry out an experimental scientific search.

### **6. Recommended literature**

#### **Basic**

1. Goodman & Gilman's : the Pharmacological Basis of Therapeutics, 13e Author: Laurence L Brunton; Björn C Knollmann; Randa Hilal-Dandan Publisher: New York, N.Y. : McGraw-Hill Education LLC., 2018. Series: McGraw-Hill's AccessMedicine. ISBN 9781259584732 1259584739
2. D Katzung & Trevor's Pharmacology Examination and Board Review, 12th Edition Bertram G. Katzung, Anthony J. Trevor, Marieke Knuidering-Hall McGraw-Hill Education, 5 сент. 2019 г. - pages 585 ISBN 126028848X, 9781260288483
3. Basic & Clinical Pharmacology 15th edition. — Katzung Bertram G., Vanderah Katzung Bertram G., Vanderah Todd W.- McGraw-Hill Education, 2021. — 1761 p. — ISBN 978-1260452310.
4. A Textbook of Clinical Pharmacology and Therapeutics/ Derek Waller Anthony Sampson- Elsevier.- 2017.-P. 744 –ISBN: 9780702071676
5. Basic Concepts in Pharmacology: What You Need to Know for Each Drug Class, 5e/ Janet L. Stringer. Stringer, Janet L[ed.]- McGraw-Hill's Access Medicine Publisher: New York,

N.Y.: McGraw-Hill Education LLC., 2017 ISBN: 9781259861079 (printISBN); 1259861074 (printISBN)

6. Poisoning & Drug Overdose, 7e Kent R. Olson, Ilene B. Anderson, Neal L. Benowitz, Paul D. Blanc, Richard F. Clark, Thomas E. Kearney, Susan Y. Kim-Katz, Alan H. B. Wu McGraw-Hill Education 2017 - pages: 960 ISBN 0071839798, 9780071839792
7. Клінічна фармакологія, 2021 / за ред. О.М. Біловола.- Нова книга, Вінниця 2021.-544с.
8. Компендиум 2017 – лекарственные препараты / д. ред. В.Н. Коваленко. – К.: ІУРІОН, 2017. – 2560 с. – ISBN 978-966-2066-71-5.
9. Клінічна фармакологія невідкладних станів у практиці стоматолога: навч. сіб. / О. М. Біловола, Л. Р. Боброннікова, І. І. Вакалюк та ін.; за ред. О. М. Біловола. – К.: Медицина, 2018. – 296 с.
10. A Textbook of Clinical Pharmacology and Therapeutics/Derek Waller Anthony Sampson- Elsevier.-2017.-P.744 - **ISBN: 9780702071676**
11. Basic & Clinical Pharmacology.11th ed. Norwalk, Conn: Appleton and Lange, 2010.
12. Clinical Pharmacology.12th Edition/Morris Brown Pankaj, Sharma Fraz, Mir Peter Bennett.-Elsevier.-2018-P.720- **ISBN: 9780702073281**

### **Additional**

1. Compendium 2021 - drugs / under. ed. V.N. Kovalenko. - К .: МОРИОН, 2021. - 2566 с. - ISBN 978-966-2066-71-5.
2. Clinical pharmacology of emergencies in the practice of dentist: textbook. way. / OM Bilovol, LR Bobronnikova, II Vakalyuk and others; for order. OM Bilovol. - К .: Медицина, 2018. - 296 с.
3. Clinical pharmacology. Textbook for students of medical universities, interns, general practitioners, family medicine / O.M. Bilovol, L.R. Bobronnikov, and others. - Н .: Planeta-Print LLC, 2017. - 336 p.
4. Clinical Pharmacology. 12<sup>th</sup> Edition/Morris Brown Pankaj, Sharma Fraz, Mir Peter Bennet.- Elsevier.-2018-P.720- ISBN: 9780702073281.

### **7. Information resources**

1. Page of educational course in Moodle:  
<http://distance.KNMU.edu.ua/course/view.php?id=4146>
2. <http://distance.KhNMU.edu.ua/course/view.php?id=4038> Link from the page of educational course in Moodle
3. [https://books.google.com.ua/books?id=B3OSDwAAQBAJ&printsec=frontcover&dq=pharmacology+book&hl=ru&sa=X&redir\\_esc=y#v=onepage&q=pharmacology%20book&f=false](https://books.google.com.ua/books?id=B3OSDwAAQBAJ&printsec=frontcover&dq=pharmacology+book&hl=ru&sa=X&redir_esc=y#v=onepage&q=pharmacology%20book&f=false) - Essentials of Medical Pharmacology

4. [https://books.google.com.ua/books?id=YwijBQAAQBAJ&printsec=frontcover&dq=pharmacology+book&hl=ru&sa=X&redir\\_esc=y#v=onepage&q=pharmacology%20book&f=false](https://books.google.com.ua/books?id=YwijBQAAQBAJ&printsec=frontcover&dq=pharmacology+book&hl=ru&sa=X&redir_esc=y#v=onepage&q=pharmacology%20book&f=false)- Introduction to Clinical Pharmacology - E-Book
5. [https://books.google.com.ua/books?id=9XAzDwAAQBAJ&printsec=frontcover&dq=pharmacology+book&hl=ru&sa=X&redir\\_esc=y#v=onepage&q=pharmacology%20book&f=false](https://books.google.com.ua/books?id=9XAzDwAAQBAJ&printsec=frontcover&dq=pharmacology+book&hl=ru&sa=X&redir_esc=y#v=onepage&q=pharmacology%20book&f=false) - Pharmacology Flash Cards E-Book.
6. [https://books.google.com.ua/books?id=eypGwAEACAAJ&hl=ru&source=gbs\\_book\\_other\\_versions](https://books.google.com.ua/books?id=eypGwAEACAAJ&hl=ru&source=gbs_book_other_versions) - Katzung & Trevor's Pharmacology: Examination & Board Review
7. [https://books.google.com.ua/books?id=fp8XvgAACAAJ&dq=pharmacology+book&hl=ru&sa=X&redir\\_esc=y](https://books.google.com.ua/books?id=fp8XvgAACAAJ&dq=pharmacology+book&hl=ru&sa=X&redir_esc=y) - Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th Edition
8. [https://books.google.com.ua/books?id=-2ZnDwAAQBAJ&printsec=frontcover&dq=side+effects&hl=ru&sa=X&redir\\_esc=y#v=onepage&q=side%20effects&f=false](https://books.google.com.ua/books?id=-2ZnDwAAQBAJ&printsec=frontcover&dq=side+effects&hl=ru&sa=X&redir_esc=y#v=onepage&q=side%20effects&f=false) - Managing the Side Effects of Psychotropic Medications, Sec-ond Edition
9. [https://books.google.com.ua/books?id=H-d1DwAAQBAJ&pg=PA588&dq=side+effects&hl=ru&sa=X&ved=2ahUKEwi0r8nm8fzAhWh\\_7sIHQpNB7s4FBDoAXoECAsQAg#v=onepage&q=side%20effects&f=false](https://books.google.com.ua/books?id=H-d1DwAAQBAJ&pg=PA588&dq=side+effects&hl=ru&sa=X&ved=2ahUKEwi0r8nm8fzAhWh_7sIHQpNB7s4FBDoAXoECAsQAg#v=onepage&q=side%20effects&f=false) - Side Effects of Drugs Annual: A Worldwide Yearly Survey of New Data
10. [https://books.google.com.ua/books?id=JDU5DwAAQBAJ&pg=PP2&dq=side+effects&hl=ru&sa=X&ved=2ahUKEwi0r8nm8fzAhWh\\_7sIHQpNB7s4FBDoAXoECAUQAg#v=onepage&q=side%20effects&f=false](https://books.google.com.ua/books?id=JDU5DwAAQBAJ&pg=PP2&dq=side+effects&hl=ru&sa=X&ved=2ahUKEwi0r8nm8fzAhWh_7sIHQpNB7s4FBDoAXoECAUQAg#v=onepage&q=side%20effects&f=false) - Side Effects
11. <https://books.google.com.ua/books?id=LX3sDwAAQBAJ&pg=PA96&dq=side+effects&hl=ru&sa=X&ved=2ahUKEwjQsaz7m8fzAhU4hf0HHSaXBbs4HhDoAXoECAMQAg#v=onepage&q=side%20effects&f=false> - Drug-Induced Ocular Side Effects: Clinical Ocular Toxicology E-Book.
12. [https://books.google.com.ua/books?id=Nn\\_EDwAAQBAJ&pg=PA18&dq=side+effects&hl=ru&sa=X&ved=2ahUKEwjQsaz7m8fzAhU4hf0HHSaXBbs4HhDoAXoECAQQAQAg#v=onepage&q=side%20effects&f=false](https://books.google.com.ua/books?id=Nn_EDwAAQBAJ&pg=PA18&dq=side+effects&hl=ru&sa=X&ved=2ahUKEwjQsaz7m8fzAhU4hf0HHSaXBbs4HhDoAXoECAQQAQAg#v=onepage&q=side%20effects&f=false) - Prediction of side effects from anticancer treatment.
13. <https://www.escardio.org/> web-site of European Society of Cardiology -a world leader in the discovery and dissemination of best practices in cardiovascular medicine.
14. <https://www.fda.gov/drugs/information-consumers-and-patients-drugs/finding-and-learning-about-side-effects-adverse-reactions> web-site FDA (Section devoted to monitoring and registration of side effects of drugs and medical procedures)
15. <http://libr.KhNMU.edu.ua/> the library of KhNMU
16. <http://repo.KhNMU.edu.ua> repository KhNMU
17. <https://accessmedicine.mhmedical.com/> - resources to support teachers and students on Distance Learning/ has the depth and breadth of content and functionality in place to serve as a cornerstone for online teaching and learning during this critical time.
18. Australian Bulletin of Adverse Reactions.  
<http://www.tga.health.gov.au/adr/aadrb.htm>.
19. On-line registration of adverse drug reactions on the FDA website.  
<https://www.accessdata.fda.gov/scripts/medwatch/medwatch-online.htm>.

20. British Monthly Safety Bulletin.  
<http://www.mhra.gov.uk/Publications/Safetyguidance/DrugSafetyUpdate/index.htm>.
21. Resource for drug interaction: <http://medicine.iupui.edu/flockart/>
22. Lectures for postgraduate education "Principles of Clinical Pharmacology" of the Clinical Center of the US National Institutes of Health.  
<http://www.cc.nih.gov/researchers/training/principles.shtml>.
23. Working group on pharmacotherapy of the European Society of Cardiology  
<https://www.escardio.org/>
24. Interregional Society of Evidence-Based Medicine:  
<http://www.osdm.org/index.php>
25. European Society of Clinical Pharmacologists and Pharmacotherapists:  
<http://www.eacpt.org>
26. Resource on pharmacogenetic. <http://www.pharmgkb.org/>
27. State Register of Medicines [www.moz.gov.ua](http://www.moz.gov.ua)
28. Unified protocols of patient management [www.moz.gov.ua](http://www.moz.gov.ua)
29. <http://www.osvita.org.ua> - Educational portal - all about education in Ukraine.
30. <http://nbuv.gov.ua> - site of the National Library of Ukraine named after VI Vernadsky.
31. <http://korolenko.kharkov.com> - site of Kharkiv State Scientific Library named after VG Korolenko.

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