

## *Summary of the working program of the academic discipline*

### **«Clinical pharmacology with basics of pharmacotherapy»**

General Educational Program of higher education (specialist's degree programs )

*31.05.01 General Medicine*

Department: General and clinical pharmacology

**1. The purpose of mastering the discipline** *participation in the formation of relevant competencies:* UC-1 (IUC-1.2, IUC-1.3), GPC-7 (I GPC -7.1; I GPC -7.2; I GPC -7.3), PC-8 (IPC-8.1; IPC-8.2), PC-10 (IPC-10.1, IPC-10.2)

**2. Position of the academic discipline in the structure of the General Educational Program (GEP).**

**2.1.** The discipline refers to the core part of Block 1 of GEP HE

**3. Deliverables of mastering the academic discipline and metrics of competence acquisition**

Mastering the discipline aims at acquiring the following universal (UC) and general professional (GPC) and professional (PC) competencies

№	Competence code	The content of the competence (or its part)	Code and name of the competence acquisition metric	As a result of mastering the discipline, the students should:		
				know	be able to	possess
1	UC-1	able to carry out a critical analysis of problem situations based on a systematic approach, to develop a strategy of actions	IUC 1.4. Develops and substantiates a strategy for solving a problem situation on the basis of systemic and interdisciplinary approaches.	- principles of clinical and pharmacological approaches to the choice of medicines for the pharmacotherapy of major diseases based on current Clinical recommendations and treatment standards, taking into account the principles of evidence-based medicine; - basic pharmacokinetic parameters of drugs in healthy individuals and in various pathologies, their features in the elderly, pregnant, nursing mothers and newborns; - basic principles of pharmacokinetic studies and monitoring of drug	- to identify groups of drugs for the treatment of a particular disease, based on the mechanism of action of drugs, the state of the body and the predicted impact of planned pharmacotherapy on it, based on current Clinical recommendations and treatment standards, taking into account the principles of evidence	- methods for evaluating the clinical effectiveness and safety of drugs; - skills in explaining to drug users how to take them, including when used in combination; - skills in providing recommendations to drug users on the prevention of their side effects; - skills of informing medical professionals and consumers about pharmacodynamics,

				<p>concentration;</p> <ul style="list-style-type: none"> <li>- features of drug dosage depending on age, the nature of the disease and other factors;</li> <li>- the main types of drug interaction (pharmaceutical, pharmacokinetic and pharmacodynamic), drugs-inducers and drugs - inhibitors of liver enzyme systems;</li> <li>- methods for evaluating the effectiveness and safety of drugs;</li> <li>- undesirable drug reactions, methods of their prevention and correction;</li> <li>- methods of pharmaco-economic research</li> </ul>	<ul style="list-style-type: none"> <li>-based medicine-analyze the rationality of choosing a specific drug in the group of analogues for the treatment of the main symptom complexes of various diseases according to the criteria of effectiveness and safety;</li> <li>- choose methods for monitoring the effectiveness and safety of drug use and assume the possible risk of developing undesirable drug reactions;</li> <li>- apply pharmaco-economic research methods</li> </ul>	<p>pharmacokinetic features, interactions and side effects of drugs;</p> <ul style="list-style-type: none"> <li>-skills of compliance with the rules of medical, pharmaceutical ethics and deontology in relations with medical professionals and drug users</li> </ul>
2	GPC-2	able to apply knowledge about morphofunctional features, physiological conditions and pathological processes in the human body to solve professional tasks	IGPC 2.1. Analyzes the pharmacokinetics and pharmacodynamics of a drug based on knowledge about morphofunctional features, physiological conditions and pathological processes in the human body IGPC 2.2. Explains	<ul style="list-style-type: none"> <li>-principles of clinical and pharmacological approaches to the choice of medicines drugs for the pharmacotherapy of major diseases based on current Clinical Guidelines and treatment standards, taking into account the principles of evidence-based</li> </ul>	<ul style="list-style-type: none"> <li>- to identify groups of drugs for the treatment of a particular disease, based on the mechanism of action of drugs, the state of the body and the</li> </ul>	<ul style="list-style-type: none"> <li>- methods for evaluating the clinical effectiveness and safety of drugs;</li> <li>- skills in explaining to drug users how to take them, including when used in combination;</li> <li>- skills in</li> </ul>

		<p>the main and side effects of drugs, taking into account morphofunctional features, physiological conditions and pathological processes in the human body</p> <p>IGPC -2.3. Takes into account morphofunctional features, physiological conditions and pathological processes in the human body when choosing over-the-counter medications</p>	<p>medicine;</p> <ul style="list-style-type: none"> <li>- basic pharmacokinetic parameters of drugs in healthy individuals and in various pathologies, their features in the elderly, pregnant, nursing mothers and newborns;</li> <li>- basic principles of pharmacokinetic studies and monitoring of drug concentration;</li> <li>- features of drug dosage depending on age, the nature of the disease and other factors;</li> <li>- the main types of drug interaction (pharmaceutical, pharmacokinetic and pharmacodynamic), drugs-inducers and drugs - inhibitors of liver enzyme systems;</li> <li>- methods for evaluating the effectiveness and safety of drugs;</li> <li>- undesirable drug reactions, methods of their prevention and correction;</li> <li>- methods of pharmaco-economic research</li> </ul>	<p>predicted impact of planned pharmacotherapy on it, based on current Clinical recommendations and treatment standards, taking into account the principles of evidence-based medicine-analyze the rationality of choosing a specific drug in the group of analogues for the treatment of the main symptom complexes of various diseases according to the criteria of effectiveness and safety;</p> <ul style="list-style-type: none"> <li>- choose methods for monitoring the effectiveness and safety of drug use and assume the possible risk of developing undesirable drug reactions;</li> <li>- apply pharmaco-economic research methods</li> </ul>	<p>providing recommendations to drug users on the prevention of their side effects;</p> <ul style="list-style-type: none"> <li>- skills of informing medical professionals and consumers about pharmacodynamics, pharmacokinetic features, interactions and side effects of drugs;</li> <li>- skills of compliance with the rules of medical, pharmaceutical ethics and deontology in relations with medical professionals and drug users</li> </ul>
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3	PC-3	<p><u>capable of providing pharmaceutical information and consulting during the release and sale of medicinal products for medical use</u></p>	<p>IPC-3.1. Provides information and consulting assistance to visitors of a pharmacy organization when choosing medicines</p> <p>IPC-3.2. Informs medical professionals about medicines, their synonyms and analogues, possible side effects</p> <p>IPC-3.3. Takes a decision on the replacement of the prescribed medicinal product with synonymous or analogous drugs in the prescribed manner based on information about groups of medicinal products and synonyms within the same international non-patent name</p>	<p>-principles of clinical and pharmacological approaches to the choice of medicines for pharmacotherapy of major diseases based on current Clinical Recommendations and treatment standards, taking into account the principles of evidence-based medicine;</p> <p>- basic pharmacokinetic parameters of drugs in healthy individuals and in various pathologies, their features in the elderly, pregnant, nursing mothers and newborns;</p> <p>- basic principles of pharmacokinetic studies and monitoring of drug concentration;</p> <p>- features of drug dosage depending on age, the nature of the disease and other factors;</p> <p>- the main types of drug interaction (pharmaceutical, pharmacokinetic and pharmacodynamic), drugs-inducers and drugs - inhibitors of liver enzyme systems;</p> <p>- methods for evaluating the effectiveness and safety of drugs;</p> <p>- undesirable drug reactions, methods of their prevention and correction;</p> <p>- methods of</p>	<p>- to identify groups of drugs for the treatment of a particular disease, based on the mechanism of action of drugs, the state of the body and the predicted impact of planned pharmacotherapy on it, based on current Clinical recommendations and treatment standards, taking into account the principles of evidence-based medicine-analyze the rationality of choosing a specific drug in the group of analogues for the treatment of the main symptom complexes of various diseases according to the criteria of effectiveness and safety;</p> <p>- choose methods for monitoring</p>	<p>- methods for evaluating the clinical effectiveness and safety of drugs;</p> <p>- skills in explaining to drug users how to take them, including when used in combination;</p> <p>- skills in providing recommendations to drug users on the prevention of their side effects;</p> <p>- skills of informing medical professionals and consumers about pharmacodynamics, pharmacokinetics, interactions and side effects of drugs;</p> <p>- skills of compliance with the rules of medical, pharmaceutical ethics and deontology in relations with medical professionals and drug users</p>
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				pharmacoeconomic research	the effectiveness and safety of drug use and assume the possible risk of developing undesirable drug reactions; - apply pharmacoeconomic research methods	
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#### 4. Volume of the academic discipline and types of academic work

Total labor intensity of the discipline is 9 CU (324 AH)

Type of educational work	Labor intensity		Labor intensity (AH) in semesters	
	volume in credit units (CU)	volume in academic hours (AH)	8	9
	<b>Classroom work, including</b>	<b>4.8</b>	<b>174</b>	<b>112</b>
Lectures (L)	0.9	34	22	12
Laboratory practicum (LP)*	does not provide			
Practical exercises (P)	3,9	140	90	50
Seminars (S)	does not provide			
Student's individual work (SIW)	<b>3,2</b>	<b>114</b>	<b>68</b>	<b>46</b>
Mid-term assessment exam	<b>1</b>	<b>36</b>	-	<b>36</b>
<b>TOTAL LABOR INTENSITY</b>	<b>9</b>	<b>324</b>	<b>180</b>	<b>144</b>

#### 5. Sections of the academic discipline and competencies that are formed

№	Competence code	Section name of the discipline
1	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	General issues of clinical pharmacology and pharmacotherapy
2	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of antimicrobial drugs
3	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of antiviral and antifungal drugs
4	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of psychotropic drugs
5	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of analgesic drugs
6	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of anti-inflammatory drugs

7	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of medicinal products used in diseases of the respiratory
8	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of medicinal products used in diseases of the digestive
9	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of drugs used in diseases of the cardiovascular system
10	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of drugs used in the treatment of anemia
11	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of drugs affecting the hemostatic system
12	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of drugs affecting immune processes
13	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of drugs used in skin-allergic diseases
14	<b>UC-1</b> (IUC-1.4), <b>GPC-2</b> (IGPC-2.1, IGPC-2.2, IGPC-2.3), <b>PC-3</b> (IPC-3.1, IPC-3.2, IPC-3.3)	Clinical pharmacology of drugs that affect the hormonal regulation