



FACULTY OF MEDICINE

STUDY PROGRAM 0912.1 MEDICINE 2

PHARMACOLOGY AND CLINICAL PHARMACOLOGY DEPARTMENT

APPROVED

at the meeting of the Board of quality assurance and curriculum evaluation of the Faculty of Medicine 2

Minutes No. 7 dated on 15.03.2017

Chairman _PHD, Associate Professor _____

Suman Serghei _____

APPROVED

at the meeting of the Council of Faculty of Medicine 2

Minutes No. 4 dated on 20.03.2017Dean of the Medicine nr. 2 Faculty
Associate Professor

Bețiu Mircea _____

APPROVED

At the meeting of the Committee of the department of pharmacology and clinical pharmacology

Minutes No. 9 of 06.12.2017

Head of department Corresponding Member of the AS of
RM

Ghicavii Victor _____

CURRICULUM

DISCIPLINE CLINICAL PHARMACOLOGY

Integrated studies

Type of the course: **Compulsory discipline**

Chisinau, 2017



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I. PRIMARIES

- **General presentation of the discipline: the place and role of the discipline in the formation of the specific competences of the vocational / specialty training program**

Clinical pharmacology is a clinical and applicative discipline that at the university level will enable the future doctor to acquire the pharmacokinetic, pharmacogenetic and pharmacodynamic principles of drug groups characterization in order to apply knowledge to the assessment of efficacy and harmlessness, rational selection of preparations. The study of the discipline will allow the student to argue the appropriate selection of the drugs for the particular patient and to appreciate the correctness of the indications made in accordance with clinical diagnostic and treatment standards and protocols.

Profound knowledge in the field of medical and biological disciplines (anatomy, physiology, histology, biochemistry, physiopathology, morphopathology, microbiology, fundamental pharmacology) and clinical (internal medicine, surgery, infectious diseases, pediatrics, endocrinology, neurology, obstetrics and gynecology etc.) is required to master the clinical pharmacology.

- **The mission (purpose) of the curriculum in vocational training**
The basic aim of clinical pharmacology is to develop students' ability to apply the knowledge about pharmacokinetics, pharmacodynamics, compatibility and adverse drug reactions for a rational and differential treatment of the patients.
- **Language/languages of teaching the discipline:** Romanian, Russian, English;
- **Beneficiaries:** students of the 5th year, Faculty of Medicine, student of the 4th year, Faculty of Stomatology.

II. DISCIPLINE ADMINISTRATION

Discipline code		S.09.O.084	
Discipline denomination		Clinical pharmacology	
Responsible (s) of the discipline		c.m. ASM, PhD of Medicine, professor Ghicavii Victor	
Year	5th	Semesters	9th and 10th
Total number of hours, including:			90
Course	20	Practical/laboratory works	25
Seminars	25	Individual work	20
Evaluation form	Differentiated test	Number of credits	3

III. TRAINING OBJECTIVES IN THE DISCIPLINE

At the end of the course, the student will be able to:

- **at the level of knowledge and understanding, the student must know:**
 - clinical pharmacology compartments and their importance;
 - basic principles of clinical pharmacokinetics, pharmacogenetics and pharmacodynamics;
 - study fields of pharmacoconomics, pharmacoepidemiology, pharmacovigilance, pharmacotoxicology, chronopharmacology and social pharmacology;
 - the principles of classification of medicinal products (by activity, duration of action, toxicity, clinical use, etc.);
 - mechanisms of action at the molecular and systemic level, pharmacological effects and appropriate clinical manifestations;
 - the indications, principles for the selection and use of the groups of drug preparations,
 - contraindications, side effects and precautions for the groups of drug preparations and the mandatory and essential preparations;



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- to understand the etiotropic, pathogenetic and symptomatic action of the drug preparations in the pharmacotherapy of diseases and pathological conditions;
- to establish individually the appropriate dosage regimen and the ways of administering the drugs depending on the disease and the pathology state of the organism;
- to fulfill the patient's medical history, to know the drug surveillance system;
- to be able to determine essential and vital important medicines;
- to know OTC preparations and self-medication;
- to know the principles of elaboration and design of the national and institutional therapeutical form, the medical and economic diagnostic and treatment standards, the national and institutional clinical protocols;
- to know the principles of personalized medication.

- ***at the level of application:***

- to select the elective (first line) drugs for an optimized treatment;
- to justify the prescription of drug preparations to the patient, both on the basis of the pharmacokinetic, pharmacogenetic and pharmacodynamic properties of the drug, as well as on the individual particularities of the patient;
- to establish an optimal dosage regimen, selecting rational ways of administration depending on both the pharmacodynamics, the pharmacokinetic parameters of the drug, and the age, gender, and pathological conditions of the particular patient;
- to recommend the administration of the most effective and harmless drug associations in the particular clinical situation;
- to predict the development and use of methods to prevent or correct the side (secondary) effects of drug substances;
- to implement the principles of P-drug selection and P-treatment in the particular patient;
- to determine the criteria of efficacy and harmlessness of the drug groups;
- to select information about the medicine that is useful to the patient in order to improve compliance and observance of the administration regime;
- to implement in practice the surveillance system of drugs;
- to establish the criteria for monitoring the effect of drugs;
- to elucidate the possible drug interactions and their consequences.

- ***at the integration level:***

- to appreciate the importance and place of clinical pharmacology among clinical disciplines;
- to identify the necessity of clinical pharmacology in order to establish rational and harmless treatment;
- to analyze the results of the pharmacokinetic and pharmacodynamic investigations of the drug substances;
- to select the necessary complex of investigative methods to assess the pharmacodynamic effects of medicinal products and to interpret the obtained results;
- to carry out the analysis and synthesis of pharmacological and pharmacotherapeutic information from the specialty literature in accordance with evidence-based medicine;
- to formulate principles of ethics and deontology in the conduct of pharmacotherapy;
- to select the criteria of efficacy and harmlessness of drugs for justifying the envisaged treatment;
- to carry out analysis of the pharmacotherapy of various diseases and illnesses based on unified diagnostic and treatment standards;
- to monitor the efficacy and harmlessness of drugs in the pharmacotherapy process;



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- to implement the criteria for monitoring the drug treatment during the study of clinical disciplines;
- to develop scientific research projects in the field of clinical pharmacology.

IV. PREVIOUS CONDITIONS AND REQUIREMENTS

Clinical pharmacology is a clinical and applicative discipline that at the university level will enable the future doctor to acquire the pharmacokinetic, pharmacogenetic and pharmacodynamic principles of drug groups characterization in order to apply knowledge to the assessment of efficacy and harmlessness, rational selection of preparations. The study of the discipline will allow the student to argue the appropriate selection of the drugs for the particular patient and to appreciate the correctness of the indications made in accordance with clinical diagnostic and treatment standards and protocols.

Profound knowledge in the field of medical and biological disciplines (anatomy, physiology, histology, biochemistry, physiopathology, morphopathology, microbiology, fundamental pharmacology) and clinical (internal medicine, surgery, infectious diseases, pediatrics, endocrinology, neurology, obstetrics and gynecology etc.) is required to master the clinical pharmacology.

In addition, it is necessary for the student to master the information technologies (use of the Internet, document processing, electronic tables and presentations, use of graphic programs) at an adequate level, the communication skills and teamwork, as well as being tolerant, compassionate and autonomous.

V. THEMES AND ORIENTATIVE DISTRIBUTION OF HOURS

Courses (lectures), practical works/ laboratory works/seminars and individual work

No.	THEME	Number of hours			
		L	P/W	S	I/W
A.	LECTURES				
1.	Clinical pharmacology and reforms in the field of medicine at present. The concept of rational use of drugs.	2			
2.	Clinical pharmacology of drugs used in digestive tube motility disorders.	2			
3.	Clinical pharmacology of antiarrhythmic and hypolipidemic drugs.	2			
4.	Clinical pharmacology of diuretics and plasma volume expanders drugs.	2			
5.	Clinical pharmacology of venotrope, angioprotective, cerebral and peripheral vasodilators, antimigraine drugs.	2			
6.	Clinical pharmacology of antiviral and antiprotozoic drugs.	2			
7.	Clinical pharmacology of antirheumatic drugs. Drugs used in osteoporosis.	2			
8.	Clinical pharmacology of CNS-active drugs (hypnotics, sedatives, anticonvulsants, antiepileptics, antiparkinsonian, Alzheimer's disease).	2			
9.	Pain medication.	2			
10.	Drug interactions.	2			
B.	PRACTICAL WORKS AND SEMINARS				
11.	Clinical pharmacokinetics, pharmacogenetics and pharmacodynamics. Therapeutic drug monitoring: indications and interpretations. Principles of rational drug selection and their practical application.		2	3	2
12.	Clinical pharmacology of drugs used in respiratory system diseases. Clinical pharmacology of anti-allergic drugs and immunomodulators.		3	2	2



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No.	THEME	Number of hours				
		L	P/W	S	I/W	
A.	LECTURES					
	Selection of personal drugs.					
13.	Clinical pharmacology of drugs used in secretory disorder of the digestive tract. Hepatotrope drugs. Selection of personal drugs.		2	3	2	
14.	Clinical pharmacology of anti-anginal and inotropic drugs. Selection of personal drugs.		2	3	2	
15.	Clinical pharmacology of antihypertensive and antichotensive drugs. Selection of personal drugs.		2	3	2	
16.	Clinical pharmacology of haemostatic and antithrombotic drugs. Selection of personal drugs.		3	2	2	
17.	Clinical pharmacology of antibacterial and antifungal drugs. Selection of personal drugs.		2	3	2	
18.	Clinical pharmacology of anti-inflammatory drugs.		3	2	2	
19.	Clinical pharmacology of psychotropic drugs (anxiolytics, antipsychotics, antidepressants, nootropes). Selection of personal drugs.		3	2	2	
20.	Clinical pharmacology of thyroid gland drugs, antidiabetics and glucocorticoids. Drugs used in obesity. Selection of personal drugs.		3	2	2	
Total			20	25	25	20

VI. REFERENCE OBJECTIVES AND CONTENTS UNITS

Objectives	Contents units
Theme 1.	
<ul style="list-style-type: none"> • To define the notions of clinical pharmacokinetics, pharmacogenetics and pharmacodynamics, therapeutic drug monitoring, pharmacotherapy form. • To know the reforms in the field of drug at present, the concept of rational use of drugs, the system of form and the indications for performing therapeutic drug monitoring. • To apply the principles of rational drug selection, the P-drug selection method. • To integrate the pharmacokinetic, pharmacogenic and pharmacodynamic properties of drugs for the purpose of rational drug selection. 	Clinical pharmacokinetics, pharmacogenetics and pharmacodynamics. Therapeutic drug monitoring: indications and interpretations. Principles of rational drug selection and their practical application. Clinical pharmacology and reforms in the field of drug at present. The concept of rational use of drugs.
Theme 2.	
<ul style="list-style-type: none"> • To define the notions of bronchodilatory, analgezie, immunostimulating, immunosuppressive, antiallergic drugs • To know the pharmacodynamic and pharmacokinetic particularities of immunostimulatory, immunodepressive, antiallergic drug groups and those used in diseases of the respiratory system. • To display the skills of drawing up the personal form (P-drugs). • To apply prognosis of possible side effects, to establish their dependence on the dosage regimen. • To integrate the principles of dosage regimen depending on group membership and corresponding disease. 	Clinical pharmacology of drugs used in respiratory system diseases. Clinical pharmacology of anti-allergic drugs and immunomodulators. Selection of personal drugs.
Theme 3.	



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Objectives	Contents units
<ul style="list-style-type: none">• To define the notions of anti-ulcer, prokinetic, antidiarrheal, choleric, cholecystokinetic, coelilitolytic drugs.• To know the pharmacodynamic and pharmacokinetic particularities of drug groups with influence on motility and secretory activity used in TGI system diseases.• To display the skills of drawing up the personal form (P-drugs).• To apply prognosis of possible side effects, to establish their dependence on the dosage regimen.• To integrate the principles of dosage regimen depending on group membership and corresponding disease.	<p>Clinical pharmacology of drugs used in disorders of digestive tract motility.</p> <p>Clinical pharmacology of drugs used in secretory disorders of the digestive tract.</p> <p>Hepatotrope drugs.</p> <p>Selection of personal drugs.</p>
Theme 4.	
<ul style="list-style-type: none">• To define the notions of antiarrhythmic, hypolipidemic, antianginal, inotropic drugs.• To know the pharmacodynamic and pharmacokinetic particularities of the antiarrhythmic, hypolipidemic, antianginal, and inotropic drug groups.• To display the skills of drawing up the personal form (P-drugs).• To apply prognosis of possible side effects, to establish their dependence on the dosage regimen.• To integrate the principles of dosage regimen depending on group membership and corresponding disease.	<p>Clinical pharmacology of antiarrhythmic and hypolipidemic drugs.</p> <p>Clinical pharmacology of anti-anginal and inotropic drugs.</p> <p>Selection of personal drugs.</p>
Theme 5.	
<ul style="list-style-type: none">• To select the minimum investigative complex to assess the pharmacodynamic effect of antihypertensive and antihypertensive drugs.• To analyze and to evaluate the results of pharmacodynamic studies of antihypertensives and antihypertensives;• To predict the possible complications and side effects of drugs in this group• To predict the dependence of side effects of drugs in this group on the dosage regimen and on the functional state of the heart and other organs and systems• To apply contemporary methods of pharmacological correction of side effects caused by antihypertensive and antihypertensive drugs.• to draw up the personal form (P-drugs) in the conditions associated with hypo- or hypertension.	<p>Clinical pharmacology of diuretics and plasma volume substitutes.</p> <p>Clinical pharmacology of antihypertensive and antihypertensive drugs.</p> <p>Selection of personal drugs.</p>
Theme 6.	
<ul style="list-style-type: none">• To know and to select the minimal complex of investigations in order to assess the pharmacodynamic effect of cerebral, peripheral and antimigraine vasodilators, hemostatic and antithrombotic remedies.• To know the principles of interaction of hemostatic and antithrombotic remedies with other groups of drugs and to predict the possible side effects.• To show the analysis and assessment of the results of the study of the pharmacodynamics of the cerebral, peripheral, and antimigraine vasodilators.• To predict the dependence of the side effects of the studied drugs on the dosage regimen and the functional state of the organs and systems of the body.• To apply contemporary methods of pharmacological correction of side effects caused by cerebral, peripheral and antimigraine vasodilators	<p>Clinical pharmacology of venotrope, angioprotective, cerebral and peripheral vasodilators, antimigraine drugs.</p> <p>Clinical pharmacology of haemostatic and antithrombotic drugs.</p> <p>Selection of personal drugs.</p>



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Objectives	Contents units
<ul style="list-style-type: none">•To drawn up the personal form (P-drugs) of this group of drugs	
Theme 7. <ul style="list-style-type: none">•to know the mechanisms of action and the particularities of the action of antiviral, antiprotozoic, antibacterial and antifungal drugs for their rational selection•to display analytical skills and appreciation of the results of microbiological, laboratory and instrumental methods for determining the efficacy of the drugs and for correcting the specific treatment•to predict the possible complications and side effects of the drugs•to predict the dependence of the side effects of the drugs on the dosage regimen and the functional state of the organs and systems of the body•To display the skills of drawing up the personal drugs form (P-drugs).	Clinical pharmacology of antiviral and antiprotozoic drugs. Clinical pharmacology of antibacterial and antifungal drugs. Selection of personal drugs.
Theme 8. <ul style="list-style-type: none">•to know the minimum complex of investigative methods for assessing the pharmacodynamic effect of anti-inflammatory, antirheumatic drugs and used in osteoporosis•to show the analysis and evaluation of pharmacodynamic study of anti-inflammatory, antirheumatic drugs and used in osteoporosis•to predict possible complications and side effects of the drugs of studied groups•to predict the dependence of possible appearance of side effects on the dosage regimen and the functional status of the organs and systems of the body•to apply contemporary methods of pharmacological and non-pharmacological correction of side effects caused by anti-inflammatory, antirheumatic drugs and used in osteoporosis•to display the necessary skills to drawn up the personal drugs form (P-drugs)	Clinical pharmacology of anti-inflammatory and antirheumatic drugs. Drugs used in osteoporosis. Selection of personal drugs.
Theme 9. <ul style="list-style-type: none">•to know the minimum complex of investigative methods for assessing the pharmacodynamic effect of analgesics, CNS drugs, including psychotropic drugs•to predict possible complications and side effects of the drugs from studied groups•to analyze and to evaluate the results of pharmacodynamic study of drugs, obtained by laboratory and instrumental methods•to predict the dependence of possible appearance of side effects on the dosage regimen and the functional status of the organs and systems of the body•to apply contemporary methods of prophylaxis and treatment of drugs side effects•to predict the interaction of analgesic preparations with CNS influence, including psychotropic, with each other and with other drugs	Pain medication. Clinical pharmacology of CNS-active drugs (hypnotics, sedatives, anticonvulsants, antiepileptics, antiparkinsonian, used in Alzheimer's disease). Clinical pharmacology of psychotropic drugs (anxiolytics, antipsychotics, antidepressants, nootropes). Selection of drugs medicines.
Theme 10. <ul style="list-style-type: none">• To select a minimum complex of investigative methods for assessing the pharmacodynamic effect of hormonal and antihormonal drugs•to analyze and to evaluate the results of the pharmacodynamic study of hormonal and antihormonal drugs obtained by laboratory and instrumental methods	Clinical pharmacology of thyroid gland, antidiabetics and glucocorticoids drugs. Drugs used in obesity. Selection of personal drugs. Drug interactions.



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Objectives	Contents units
<ul style="list-style-type: none">•to predict possible complications and side effects of the drugs of studied groups•to predict the dependence of possible appearance of side effects on the dosage regimen and the functional status of the organs and systems of the body•to apply contemporary methods of pharmacological and non-pharmacological correction of side effects caused by hormonal and antihormonal drugs•to select a minimal complex of investigative methods for assessing the pharmacodynamic effect change by the pharmacokinetic and pharmacodynamic drug interactions•to analyze and to evaluate the results of the pharmacodynamics of the various drug substances, taking into account the possible interactions between them•to predict the dependence of possible appearance of side effects on the dosage regimen and the functional status of the organs and systems of the body•to apply contemporary methods of pharmacological and non-pharmacological correction of side effects caused by the drugs•to know and to apply the principles of treatment and prophylaxis of intoxications with drugs and toxic substances	

VII. PROFESSIONAL (SPECIFIC) (SC) AND TRANSVERSAL (TC) COMPETENCES AND STUDY FINDINGS

✓ Professional (specific) competences (SC)

- PC1. Drug selection and argumentation for prescribing them to patients, both on the basis of the pharmacokinetic, pharmacogenetic and pharmacodynamic properties of the drug, as well as on the individual peculiarities of the patient;
-
- PC2. Determining an optimal dosage regimen of drugs, selecting rational ways of administration depending on both the pharmacodynamics, the pharmacokinetic parameters of the drug, and the age, gender, and pathological conditions of the particular patient, in order to improve the compliance and observance with the administration regime;
- PC3. Determining the criteria of efficacy and harmlessness of the groups of drugs and, based on them, the selection of P-drugs and P-treatment in the specific patient;
- PC4. Selecting the required set of research methods to estimate the pharmacodynamic effects of drugs and interpret the obtained data.
- PC5. Assessment of possible drug interactions and their (favorable or detrimental) consequences.
- PC6. Monitoring and assessing the efficacy and harmlessness of drug therapy, including prognosis, prophylaxis and treatment of side (secondary) effects of the drug in the specific clinical situation;
- PC7. Implementing in practice the surveillance system of drugs.

✓ Transversal competences (TC)

- TC1. Preparation for abstract thinking, analysis, synthesis.
- TC2. Improving decision-making autonomy.
- TC3. Forming personal attitude.
- TC4. Ability to social interaction, group work with different roles.
- TC5. Introduction into interdisciplinary projects, extracurricular activities.
- TC6. Improving digital skills.



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- TC7. Developing different techniques to learn.
- TC8. Selection of digital materials, critical analysis and conclusions wording.
- TC9. Presentation of individual scientific projects.

Study finalizations

- ✓ At the end of the cycle, the student must have a broad knowledge of the classification and basic characteristics of drugs, drug belonging to certain groups, pharmacodynamics and pharmacokinetics of drugs, indications and contraindications regarding the use of drugs; side effects of drugs.
- ✓ The student should be able to analyze the action of drugs in terms of their pharmacological properties, to select the most effective and harmless drugs, to assess the possibility of using drugs for diagnosis, prophylaxis and treatment; to use drugs under certain pathological conditions based on pharmacodynamic, pharmacokinetic, chronopharmacological and drug specific properties in different age groups, in patients with various comorbidities and in pregnant women, to predict drug interaction and their biotransformation in the body.
- ✓ The student must acquire the necessary skills to assess the possibility of using drugs for the treatment and prevention of various diseases and pathologies.
- ✓ The student shall draw up the drug personal form at the end of the module.

VIII. INDIVIDUAL WORK OF THE STUDENT

No.	Expected product	Implementation strategies	Evaluation criteria	Deadline
1.	Brief characterization of the main drug preparations	Based on the material presented in module of the methodical guidelines for practical clinical pharmacology, using clinical protocols, pharmacotherapeutic form and drug guides, the student will accumulate, systematize and drawn up his list of mandatory drugs, which shall include: common international name of the drugs, synonyms, forms of delivery, mode of administration, (therapeutic, maximal) doses, indications, contraindications, side effects.	The volume of work, the presence of the characterization of all the drugs specified in the methodical indications, the sources used for accomplishing the individual work, the student shall know all the presented things.	Throughout the module
2.	Medical recipe exercises	Based on the methodical guidelines for practical clinical pharmacology and using the drug guides (including the use of a brief characterization of his own main drugs), the student will prescribe the mandatory drugs in all delivery forms, with mandatory indication of the appropriate dosage regimen and disease in the instruction.	The volume of work, the presence of prescriptions for all medicines and their forms of delivery, the observance of the rules of drug prescription, the quality of instruction, the ability of the student to prescribe the drug to another patient with possible other illness and / or comorbidities and physiological particularities.	Throughout the module
3.	Selection of drugs according to	It will be performed on the basis of the methodology specified in the annex "METHODOLOGICAL INDICATIONS ON THE RATIONAL	Volume of work, quality of used sources, student argumentation of P drug selection, lack of plagiarism.	Throughout the module



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the criteria of effectiveness, harmlessness, acceptability and cost, for inclusion in the personal form (P drugs)

SELECTION OF DRUGS" of the "Methodical indications for practical works in clinical pharmacology", with prior examples during practical classes and using the contemporary bibliographical sources (manuals, guides, protocols, publications).

IX. METHODOLOGICAL SUGGESTIONS OF TEACHING-LEARNING-EVALUATION

• *Methods used in teaching and learning*

Clinical pharmacology is taught according to the classical principles of university studies (instruction), using the methods: exposure, interactive lecture, heuristic conversation, problem-solving, brainstorming, group work, individual study, work with textbook and scientific text, debate, solving problem situations, role play, simulation, interactive listening.

• *Applied didactic strategies/technologies*

Theoretically selected material from the literature, which is not contained in the available literature shall be taught at the lectures. At the seminars, the students will deepen their theoretical knowledge, will demonstrate the abilities of prescribing the drugs in the appropriate medicamentous forms; will fulfill the patient's clean-up protocol; will argue the prescription of elective drugs to the particular patient; will elucidate the pharmacological effects of prescribed drugs and will monitor the evolution of the clinical condition of the particular patient; will select the personal medicine (P-drug) based on the criteria of effectiveness, harmlessness, acceptability and cost; will determine drug administration schedules (P-treatment); will have the ability to fill in the information sheet on drugs side effects.

• *Methods of assessment (including the final grade calculation method)*

Clinical Pharmacology discipline uses the following forms of assessment during the study:

A. Current:

- Test of primary knowledge of the course;
- Test of final knowledge of the course;
- Interactive discussion;
- Preparation of the treatment protocol;
- Solving clinical cases;

B. Final

- differentiated test.

Test of primary knowledge of the course includes medical recipe exercises, tests and general theoretical questions. Test of final knowledge of the course contains correlation tests, problem situations that need to be analyzed, and the application of the knowledge gained from self-training and interactive discussion. The clinical protocol (research paper) provides for the analysis of the medical treatment prescribed to the patient based on the knowledge gained in the self-instruction process, the interactive discussion, the solving of the clinical cases.

Differentiated test includes 2 variants: the first one- theoretical questions, medical recipe exercises and tests (single and multiple compliment), the second one - tests (50) of different types with 15 medical prescriptions and therapeutic indications.



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Methods of mark rounding at the evaluation stages

Intermediate note grid (annual average mark, marks of the exam stages)	National mark system	ECTS equivalent
1,00-3,00	2	F
3,01-4,99	4	FX
5,00	5	E
5,01-5,50	5,5	
5,51-6,0	6	D
6,01-6,50	6,5	
6,51-7,00	7	C
7,01-7,50	7,5	
7,51-8,00	8	B
8,01-8,50	8,5	
8,51-8,00	9	A
9,01-9,50	9,5	
9,51-10,0	10	

The average annual mark and the marks of all stages of final examination (computer assisted, test, oral) - all will be expressed in numbers according to the evaluative scale (according to the table), and the final mark will be expressed in two decimal digits will be transferred to the student's record book.

Absence on examination without good reason shall be recorded as "absent" and is equivalent to 0 (zero). The student has the right to re-take the exam twice.

X. RECOMMENDED LITERATURE:

A. *Compulsory:*

1. Clinical Pharmacology (edited by Professor. Ghicavii V.). Chisinau, 2009.
2. Pharmacology (edited by Professor. Ghicavii V.). Chisinau, 2010, 2012.
3. Clinical Pharmacology (self-assessment tests). Chisinau, 2000.
4. Cristea A.N. Treaty of Pharmacology, ed I. Bucharest, 2005.
5. Ghicavii V. Some aspects of rational use of medicines. Chisinau, 2002.
6. Ghicavii V. Medicamentele și utilizarea lor rațională. Chisinau, 2004.
7. Ghicavii V. et al. Pharmacotherapy of dental diseases. Chisinau, 2002.
8. Stroescu V. Pharmacological Basis of medical practice. Bucharest, 2000.
9. Kukes VG. Clinical pharmacology. GEOTAR M. Medicine, 2004.
10. Mikhailov IB. Clinical pharmacology. St. Petersburg, 2005.
11. Ghicavii V. Pharmacotherapy of major dental diseases. Chisinau, 2006.
12. Ghicavii V. Drug – benefit or injury. Chisinau, 2009.
13. Ghicavii V. Clinical Pharmacology Service in the Public (curative) Health Institution. Chisinau, 2010.
14. Drugs- basis of rational pharmacotherapy (edited by professor V. Ghicavii). Chisinau, 2013.

B. *Additional:*

1. Ghicavii V. et al. Antibiotics in otorhinolaryngology. Chisinau, 2001.
2. Pharmacotherapeutic Guide. Chisinau, 2010.
3. Ghicavii V. et al. Modern pharmacotherapy of digestive disorders. Chisinau, 2017.



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4. Muhin E., Ghicavii V., Gonciar V., Bacinschi N. Medication of cerebral and peripheral circulation disorders. Chisinau, 1998.
5. Cristea A.N. General pharmacology. Bucharest, 2003.
6. Medico-economic standards. Chisinau, 2010.
7. Belousov Yu.B. et al. Clinical pharmacology and pharmacotherapy. M. Medicine, 2003.
8. Bertman G. Kattsung. Basic and clinical pharmacology, 2007.
9. Goodman G. and Gilman G. Clinical pharmacology. 10th edition, M.: 2006.
10. Karkishchenko N.N. Pharmacological basis of therapy, 1996.
11. Mikhailov I.B. Fundamentals of rational pharmacotherapy. St. Petersburg, 1999.
12. Kharkevich D.A. Pharmacology. GEOTAR M. Medicine, 2006.
13. Markova I.V. et al. Pediatric pharmacology. M. Medicine, 1991.
14. Mashkovsky M.D. Drugs vol. I and II, Kharkiv, "Torsing", 2006.
15. Metelitsa V.I. Reference book on clinical pharmacology of cardiovascular drugs. Saint-Petersburg, 2005
16. Fundamentals of clinical pharmacology and rational pharmacotherapy. M. 2002.
17. Parijskaya T.V, Orlova N.V., Ghicavii V.I. Reference book of physician in pediatrics. Chisinau, 2001.
18. Parijskaya T.V. Pediatrics urgent condition in children. Moscow, St. Petersburg, 2006.
19. Rational antimicrobial pharmacotherapy. M. 2003.
20. Rational pharmacotherapy of digestive diseases. M. 2003.
21. Rational pharmacotherapy of rheumatic diseases. M. 2003.
22. Rational pharmacotherapy in ophthalmology. M. 2004.
23. Rational pharmacotherapy for cardiovascular disease. M. 2005.
24. Rational pharmacotherapy of skin diseases and sexually transmitted infections. M.2005
25. Rational pharmacotherapy in obstetrics and gynecology. M.2005.
26. Rational pharmacotherapy in urology. M. 2005.
27. Rational pharmacotherapy of respiratory diseases. M.2006.
28. Rational pharmacotherapy of the endocrine system and metabolism disorders. M., 2006.
29. Rational pharmacotherapy in dentistry. M., 2006.
30. Rational pharmacotherapy in nephrology. M., 2006.
31. Rational pharmacotherapy in urology. M., 2006.
32. Rational pharmacotherapy of allergic diseases. M., 2007.
33. Rational pharmacotherapy for children's diseases. V.1-2. M., 2007.
34. Reference book of Vidal. M. 2000 - 2006.
35. Stratchounski L.S., Belousov Yu.B., Kozlov S.N. Antibacterial therapy. Moscow, 2003.
36. Stratchounski L.S., Belousov Yu.B., Kozlov S.N. Guidelines for rational antibiotic therapy. Moscow, 2007.
37. Clinical pharmacology. National leadership. Moscow, 2009.



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