

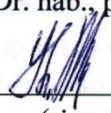
	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 1/ 16	

FACULTY of MEDICINE
Bachelor's degree program,
Integrated higher education program, cycle I + II (Bachelor's and Master's), 7 NQF –0912.1
Medicine
DEPARTMENT OF PHARMACOLOGY AND CLINICAL PHARMACOLOGY

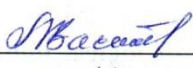
APPROVED
at the meeting of the Commission for Quality
Assurance and Curricular Assessment in Medicine
Minutes no. 5 of 23.03.26
President, Dr. hab., prof.

Pădure Andrei 
(signature)

APPROVED
at the Council meeting
Faculty of Medicine
Minutes no. 6 of 24.03.26
Dean of the Faculty of Medicine
President, Dr. hab., prof.

Plăcintă Gheorghe 
(signature)

APPROVED
at the meeting of the Department of pharmacology and clinical
pharmacology
Minutes no. 12 of 16.03.2026
Head of Department, Dr. hab., Prof.

Bacinschi Nicolae 
(signature)

CURRICULUM
DISCIPLINE PHARMACOLOGY

Course type: **Compulsory**

Curriculum developed by the team of authors:
Pogonea Ina, PhD MSc., assoc. prof.
Corețchi Ianoș, PhD MSc., assoc. prof.
Spînosu Galina, assist. Prof.

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 2/ 16	

I. PRELIMINARIES

• General presentation of the discipline:

Pharmacology is an important component of preclinical education and aims to provide the informational and practical foundation required for the development of theoretical knowledge and practical skills in the field of medicines, as well as for understanding the regularities of interaction between medicinal products and the human body.

The discipline content is oriented toward the development of specific competencies in the field of medicines, including correct prescription writing; study of the main branches of pharmacology (pharmacokinetics, pharmacodynamics, and pharmacogenetics); and understanding and description of the general principles of drug-body interaction. An essential component is the characterization of drug groups, including principles of classification, mechanisms of action and pharmacological effects, indications and contraindications, and adverse reactions. At the same time, the discipline aims to develop the ability to select and prescribe drug groups and individual medicines in different diseases and pathological conditions, to know the symptoms and principles of treatment in drug poisoning, and to anticipate the influence of medicines on quality of life and relevant public health aspects.

• Curriculum mission (purpose) in professional training

The main purpose of the discipline is to study the fundamental regularities of drug pharmacokinetics, pharmacogenetics, and pharmacodynamics, as well as their interaction with the human body, and to develop knowledge and skills for the effective and safe prescribing and administration of medicines in the treatment of diseases and pathological conditions.

Achieving this purpose will contribute to the formation of a theoretical basis in the field of medicines; the development of logical thinking for applying acquired knowledge to the study of clinical disciplines; and the recognition of the necessity and importance of pharmacology as a biomedical discipline for clinical disciplines and of its contribution to rational, effective, and safe treatment. Knowledge of pharmacology and continuous improvement in this field are current necessities, because twenty-first century medicine is increasingly based on the principles of personalized medicine.

- Language(s) of instruction: Romanian/ Russian/ English/ French;
- Beneficiaries: students of the year III, Study Program 0912.1 Medicine, Faculty of Medicine No. 1 and Faculty of Medicine No. 2.

II. ADMINISTRATION OF DISCIPLINE

Study program		0912.1 Medicine			
Code and name of the discipline		F.05.O.043/F.06.O.051			
Discipline coordinators		Pogonea Ina, PhD MSc., assoc. prof. Corețchi Ianoș, PhD MSc., assoc. prof.			
Year	III	Semester/Semesters			5/6
Total number of hours, including:					120/90
Lectures	30/30	Practical/laboratory work			15/15
Seminars	20/15	Clinical Internship		Individual work	45/30

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 3/ 16	

Form of assessment	E	Number of credits	4/3
--------------------	----------	-------------------	------------

III. GENERAL, PROFESSIONAL COMPETENCES AND LEARNING OUTCOMES

PROFESSIONAL COMPETENCES	
PC 1. Application of knowledge about the structure of the human body, physiological functions, and the behavior of healthy and ill individuals, as well as the relationships between health status and the physical and social environment.	LO 6. describe, explain, and apply the fundamental structural (anatomical, histological, cellular, and molecular) and functional (physiological, biochemical, biophysical) concepts characteristic of the healthy human body, and formulate well-founded conclusions regarding health or disease status depending on the physical and social context
PC 2. Integration of relevant knowledge about the sciences underlying medicine, research methods, including the principles of measuring biological functions, the evaluation of scientifically established data, and their analysis.	LO 7. identify, evaluate, analyze, and integrate fundamental concepts regarding disease mechanisms, risk factors, principles of methods for investigating biological functions, and general principles of treatment

IV. PREREQUISITES AND REQUIREMENTS

- Confirmed competencies in previous biomedical sciences (molecular biology, chemistry and biochemistry, physiology, anatomy, medical terminology, microbiology), as well as in related disciplines (pathological anatomy, pathophysiology, and semiology of internal and surgical diseases).
- Digital competencies (Internet use, MS word processing, spreadsheets and presentations, and use of graphics software).
- Communication and teamwork skills.
- Qualities: responsibility, punctuality, correctness, compliance, perseverance, tolerance, compassion, and autonomy.

V. LEARNING UNITS

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

No.	Topic	Number of hours		
		Lectures	Practice	Individual
1	Pharmacology and its importance. Its relationships with other disciplines. Main divisions and branches of pharmacology. Drug development. History of national pharmacology.	2	-	-
2	Medical prescription writing. Introduction. Solid and semisolid dosage forms.	-	3	3
3	Liquid, injectable, and gaseous dosage forms. Modified-release dosage forms.	-	3	3



**CD 8.5.1 CURRICULUM DISCIPLINE
FOR UNIVERSITY STUDIES**

**Editorial
team :**

11

Date:

20.01.2026

Page 4/ 16

No.	Topic	Number of hours		
		Lectures	Practice	Individual
4	General pharmacology: pharmacokinetics, pharmacogenetics, and pharmacodynamics.	-	3	3
5	Adrenergic agonists and dopaminergic agonists.	2	3	3
6	Adrenergic blockers, dopaminergic blockers, and sympatholytics.	2	3	3
7	Cholinomimetics and anticholinesterase drugs. Cholinergic blockers.	2	3	3
8	Local anesthetics. Astringent, demulcent, adsorbent, and irritant preparations.	2	-	-
9	<i>Integrative assessment/concluding: Medical prescription writing and modified-release dosage forms. General pharmacology. Drugs acting on the autonomic nervous system.</i>	-	3	3
10	Antiseptics and disinfectants. Sulfonamides. Antibacterial chemotherapeutic agents with diverse chemical structures.	2	3	3
11	Antibiotics.	2	3	3
12	Antiviral, antifungal, and antipirochetal drugs.	2	3	3
13	Antitubercular, antileprosy, antiprotozoal, and anthelmintic drugs.	2	3	3
14	<i>Integrative assessment/concluding: Antimicrobial and antiparasitic drugs.</i>	-	3	3
15	Anti-inflammatory drugs. Antiallergic drugs and drugs affecting immune processes.	2	3	3
16	Hormonal and antihormonal preparations (Part I).	2	3	3
17	Hormonal and antihormonal preparations (Part II). Oxytocics and tocolytics.	2	3	3
18	Drugs acting on respiratory system functions.	2	2	2
19	Antiarrhythmic and antianginal drugs.	2	2	2
20	Diuretics. Antigout drugs. Drugs used in urolithiasis. Drugs used in hydro-electrolyte and acid-base disorders. Plasma volume expanders.	2	2	2
21	Systemic vasodilators (antihypertensive agents). Systemic vasoconstrictors (antihypotensive agents).	2	2	2

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 5/ 16	

No.	Topic	Number of hours		
		Lectures	Practice	Individual
22	Cardiotonic and cardiostimulant drugs.	2	2	2
23	Antithrombotic drugs (anticoagulants, antiplatelet agents, fibrinolytics). Drugs affecting hemostasis (local and systemic) and drugs acting on hematopoietic organs.	2	2	2
24	Drugs acting on gastrointestinal tract functions. Spasmolytic drugs.	2	2	2
25	Drugs used in the treatment of cerebral and peripheral vascular circulation disorders. Antimigraine drugs. Venotropic drugs.	2	-	-
26	<i>Integrative assessment/concluding: Drugs acting on the respiratory, cardiovascular, and digestive systems. Diuretics. Antigout drugs. Drugs used in urolithiasis. Drugs used in hydro-electrolyte and acid-base disorders. Plasma volume expanders. Blood medication.</i>	-	2	2
27	Opioid and non-opioid analgesics. General anesthetics.	2	2	2
28	Ethanol. Hypnotics, anticonvulsants, antiepileptic drugs, antiparkinsonian drugs, and skeletal muscle antispastic agents.	2	2	2
29	Psycholeptics: sedatives, anxiolytics, antipsychotics, and mood stabilizers.	2	2	2
30	Psychoanaleptics: antidepressants, CNS stimulants, nootropics, analeptics, general tonics, and adaptogens.	2	2	2
31	<i>Integrative assessment/concluding: Drugs acting on the CNS.</i>	-	2	2
32	Vitamins, enzymes, and antienzymes. Drugs used in obesity, hyperlipidemias (antiatherosclerotic agents), and osteoporosis.	2	2	2
33	Adverse drug reactions. Basic principles of treatment of acute poisonings. Drug interactions.	2	2	2
34	Antineoplastic, radioprotective, and radiopaque preparations. Monoclonal antibody preparations.	2	-	-
Total		60	75	75

VI. PRACTICAL SKILLS ACQUIRED AT THE COMPLETION OF THE DISCIPLINE

The essential practical skills required are:

- Understanding the structure of a prescription and completing prescription forms;
- Prescribing medicines in appropriate dosage forms;

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 6/ 16	

- Using pharmacological terminology in the study of clinical disciplines;
- Selecting drug groups and preparations, dosage forms, and routes of administration suitable for diseases and pathological conditions in emergency situations;
- Developing skills in working with scientific literature in the field of pharmacology.

VII. CONTENT UNITS AND LEARNING OUTCOMES FORMED

Chapter 1. Medical prescription. Solid, semisolid, liquid, injectable, gaseous, and modified-release dosage forms. General pharmacology: pharmacokinetics, pharmacogenetics, and pharmacodynamics.

Content Units:

1. Regulations of the prescribing and dispensing of medicines
2. The concept of a medicine and the composition of medicines
3. Vital, essential, non-essential, orphan, and falsified medicines
4. International nonproprietary names, chemical, official, and trade names of medicines
5. Principles of drug development and research
6. The prescription and its components
7. Prescription forms
8. Official and magistral forms of prescribing pharmaceutical preparations
9. Pharmaceutical dosage forms: solid, semisolid, liquid, injectable, gaseous, and modified-release
10. Objectives of pharmacokinetics, pharmacogenetics, and pharmacodynamics
11. Pharmacokinetic parameters of pharmacokinetic processes (absorption, distribution, metabolism, and elimination)
12. Pharmacodynamic parameters, types, and mechanisms of drug action
13. Phenomena occurring during repeated and combined drug administration
14. Pharmacogenetics and pharmacogenomics

Learning outcomes formed: LO 6, LO 7

Knowledge	Skills	Responsibility and autonomy
1. The regulatory framework governing the prescribing and dispensing of medicines. 2. The concept of a medicine and its components (active substance, excipients). 3. The concepts of vital, essential, non-essential, orphan, and falsified medicines. 4. International nonproprietary name	1. Correctly completes a medical prescription according to legal requirements. 2. Applies the rules for prescribing solid, semisolid, liquid, injectable, and gaseous dosage forms. 3. Justifies the selection of medicines based on pharmacokinetic parameters: absorption, distribution, metabolism,	The graduate assumes autonomous responsibility for: 1. complying with the legislative framework and ethical standards in the process of prescribing medicines 2. demonstrating professional responsibility in the correct prescribing of medicines 3. ensuring patient safety by appropriately selecting dosage forms and preventing prescribing errors 4. integrating the principles of



**CD 8.5.1 CURRICULUM DISCIPLINE
FOR UNIVERSITY STUDIES**

**Editorial
team :**

11

Date:

20.01.2026

Page 7/ 16

(INN), chemical, trade, and official names. 5. The structure and components of a medical prescription. 6. Types of prescription forms used in practice. 7. Official and magistral forms of prescribing. 8. Solid, semisolid, liquid, injectable, gaseous, and modified-release dosage forms. 9. Concepts of pharmacokinetics, pharmacodynamics, pharmacogenetics, and pharmacogenomics. 10. Pharmacokinetic parameters and the characteristics of absorption, distribution, metabolism, and elimination processes. 11. The concept of pharmacodynamics, primary action and overall pharmacological effect, the concept and types of receptors. 12. Types of action and typical mechanisms of drug action, types of doses and principles of dosing. 13. Phenomena occurring during repeated and combined administration of medicines.	and elimination. 4. Correlates pharmacokinetic parameters with the group characteristics of medicines. 5. Analyzes the particularities of routes of administration and the processes of absorption, distribution, metabolism, and elimination. 6. Interprets types of doses, principles of dosing, and the dose–effect relationship in prescribing medicines. 7. Identifies phenomena occurring during repeated and combined administration of medicines. 8. Interprets pharmacodynamic action, primary action, and the overall pharmacological effect. 9. Analyzes types and mechanisms of action of medicines. 10. Interprets pharmacogenetic particularities in describing the pharmacokinetics and pharmacodynamics of medicines.	pharmacokinetics, pharmacogenetics, and pharmacodynamics in the characterization of medicines 5. incorporating pharmacokinetic parameters into pharmacological research 6. critically evaluating pharmacodynamic parameters responsible for clinical efficacy 7. applying the principles of pharmacovigilance in therapy monitoring 8. using information on genetic variability in the individualization of treatment 9. formulating scientifically grounded therapeutic recommendations in a clinical context.
Chapter 2. Drugs affecting peripheral innervation. Content Units: 1. Adrenomimetic and dopaminomimetic drugs		



CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES

**Editorial
team :**

11

Date:

20.01.2026

Page 8/ 16

2. Adrenergic blockers, dopaminergic blockers, and sympatholytics
3. Cholinomimetics and anticholinesterase agents
4. Cholinergic blockers
5. Local anesthetics
6. Astringent, mucilaginous, adsorbent, and irritant drugs

Learning outcomes formed: LO 6, LO 7

Knowledge

1. Pharmacological groups and classification principles: definition of these groups
2. Pharmacodynamic and pharmacokinetic particularities of the drug groups and mechanisms of pharmacological effects
3. Indications, contraindications, and adverse reactions of adrenergic and cholinergic drugs; of local anesthetics, astringent, adsorbent, mucilaginous, and irritant preparations
4. Clinical symptoms of intoxications with drugs from these groups and principles of treatment

Skills

1. Demonstrates analytical and synthetic abilities in solving tables, diagrams, and situational problems
2. Applies prescribing and selection particularities of drugs in diseases and pathological states
3. Integrates studied material in solving clinical cases
4. Identifies drug groups of choice in diseases and pathological states related to the autonomic (vegetative) system
5. Analyzes advantages and disadvantages of drugs based on contraindications and adverse reactions in pathologies associated with the autonomic system

Responsibility and autonomy

The graduate assumes autonomous responsibility for:

1. demonstrating knowledge in characterizing drugs acting on the peripheral innervation
2. applying pharmacodynamic properties in the correct selection of drug groups according to indications
3. analyzing the appropriateness of drug selection in diseases and pathological states based on the pharmacological characteristics of the groups
4. integrating data on the pharmacological properties of drugs to implement pharmacotherapy in diseases and pathological states

Chapter 3. Antimicrobial and antiparasitic drugs

Content Units:

1. Antiseptic and disinfectant preparations
2. Sulfonamides
3. Chemotherapeutic antibacterial agents with diverse chemical structures
4. Antibiotics
5. Antiviral agents



**CD 8.5.1 CURRICULUM DISCIPLINE
FOR UNIVERSITY STUDIES**

**Editorial
team :**

11

Date:

20.01.2026

Page 9/ 16

6. Antifungal agents
7. Antispirochetal agents
8. Antituberculous agents
9. Antileprotic agents
10. Antiprotozoal agents
- 11. Antihelminthic agents**

Learning outcomes formed: LO 6, LO 7

Knowledge

1. Principles of classification and groups of antimicrobial preparations: definition and classification of these groups
2. Particularities of the spectrum and mechanism of action, as well as pharmacokinetic properties of antiseptics and disinfectants, chemotherapeutics with diverse chemical structures, antibiotics, antiviral, antifungal, antiprotozoal, antituberculous, and antihelminthic preparations
3. Indications of antimicrobial preparations according to infectious pathology
4. Specific adverse reactions of antiseptics and disinfectants, chemotherapeutics with diverse chemical structures, antibiotics, antiviral, antifungal, antiprotozoal, antituberculous, and antihelminthic

Skills

1. Demonstrates analytical and synthetic abilities in solving tables, diagrams, and situational problems
2. Applies prescribing and selection particularities of antimicrobial and antiparasitic drugs in diseases and pathological states
3. Integrates accumulated material in solving clinical cases
4. Selects antimicrobial and antiparasitic drugs appropriately according to etiology, spectrum of action, and antibiogram
5. Identifies causes and mechanisms of bacterial resistance according to the pathogen and class of antimicrobials

Responsibility and autonomy

The graduate assumes autonomous responsibility for:

1. demonstrating knowledge of antimicrobial and antiparasitic drug groups, their spectrum and mechanisms of action, as well as the particularities of antibacterial effects
2. justifying the correct and targeted selection of drugs according to the pathogen
3. applying the spectrum and mechanism of action, as well as the antibacterial effect, for the correct selection of drugs
4. integrating data on the pharmacological properties of antimicrobial and antiparasitic drugs to implement antibacterial treatment in clinical disciplines



**CD 8.5.1 CURRICULUM DISCIPLINE
FOR UNIVERSITY STUDIES**

**Editorial
team :**

11

Date:

20.01.2026

Page 10/ 16

preparations

Chapter 4. Drugs acting on the effector function of organs and systems

Content Units:

1. Drugs acting on respiratory system functions
2. Cardiotonic and cardiostimulatory drugs
3. Antiarrhythmic and antianginal drugs
4. Systemic vasodilators (antihypertensives)
5. Systemic vasoconstrictors (antihypotensives)
6. Drugs used in the treatment of cerebral and peripheral vascular circulation disorders
7. Antimigraine agents
8. Venotropic drugs
9. Diuretics
10. Antigout drugs
11. Drugs used in urolithiasis
12. Drugs used in disorders of hydro-electrolytic and acid-base balance
13. Plasma volume substitutes
14. Antithrombotic drugs (anticoagulants, antiplatelets, fibrinolytics)
15. Drugs acting on hemostasis: hemostatics (coagulants), antifibrinolytics, platelet aggregators, and drugs affecting hematopoietic organs

Learning outcomes formed: LO 6, LO 7

Knowledge

1. Pharmacological groups and classification principles: definition of these groups
2. Pharmacodynamic and pharmacokinetic particularities, as well as mechanisms of pharmacological effects of preparations affecting effector organs and systems
3. Indications, contraindications, and adverse reactions of drug groups
4. Clinical symptoms of drug intoxications and principles of treatment

Skills

1. Demonstrates analytical and synthetic abilities in solving tables, diagrams, and situational problems
2. Applies prescribing and selection particularities of drugs in diseases and pathological states
3. Integrates accumulated material in solving clinical cases
4. Selects first-choice drug groups in pathological conditions
5. Indicates drug groups taking into account contraindications and adverse reactions

Responsibility and autonomy

The graduate assumes autonomous responsibility for:

1. demonstrating knowledge in the classification and pharmacodynamics of drugs
2. formulating well-founded conclusions regarding the correct and targeted selection of drugs, taking into account pathogenetic links
3. applying pharmacokinetic and pharmacodynamic properties for the correct selection of drugs
4. integrating data on the

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 11/ 16	
		pharmacological properties of drugs affecting effector organs and systems to implement pharmacotherapy in diseases and pathological states	
Chapter 5. Drugs affecting the Central Nervous System (CNS)			
Content Units:			
1. Opioid and non-opioid analgesics			
2. General anesthetics			
3. Ethanol			
4. Hypnotics, anticonvulsants, antiepileptics, antiparkinsonian agents, skeletal muscle antispasmodics			
5. Psycholeptics: antipsychotics, anxiolytics, sedatives, normothymics			
6. Psychoanaleptics: antidepressants			
7. CNS stimulants			
8. Nootropics			
9. Analeptics			
10. General tonics and adaptogens			
Learning outcomes formed: LO 6, LO 7			
Knowledge	Skills	Responsibility and autonomy	
1. Pharmacological groups and classification principles: definition of these groups	1. Demonstrates analytical and synthetic abilities in solving tables, diagrams, and situational problems	The graduate assumes autonomous responsibility for:	
2. Pharmacodynamic and pharmacokinetic particularities of drug groups and mechanisms of pharmacological effects	2. Applies prescribing and selection particularities of drugs in diseases and pathological states	1. demonstrating knowledge in the classification, pharmacodynamics, and pharmacokinetics of drugs	
3. Indications, contraindications, and adverse reactions of drug groups	3. Integrates accumulated material in solving clinical cases	2. formulating well-founded conclusions regarding the correct and targeted selection of drugs, taking into account pathogenetic links	
4. Clinical presentation of drug intoxications and principles of treatment	4. Selects first-choice drug groups in pathological conditions	3. applying pharmacokinetic and pharmacodynamic characteristics for the	
	5. Indicates drug groups taking into account contraindications and adverse reactions		

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 12/ 16	
		correct selection of drugs 4. integrating data on the pharmacological properties of drugs affecting effector organs and systems to implement pharmacotherapy in diseases and pathological states	
Chapter 6. Drugs acting on inflammatory, metabolic, and immune processes. Antineoplastic, radioprotective, and radiopaque contrast drugs			
Content Units: 1. Anti-inflammatory drugs 2. Antiallergic drugs and drugs affecting immune processes 3. Hormonal and antihormonal drugs 4. Oxytocics and tocolytics 5. Vitamins, enzymes, and antienzymes 6. Drugs used in obesity, hyperlipidemia (anti-atherosclerotic), and osteoporosis 7. Antineoplastic, radioprotective, and radiopaque contrast drugs 8. Monoclonal antibody-based drugs 9. Adverse drug reactions 10. Basic principles of acute poisoning treatment 11. Drug interactions			
Learning outcomes formed: LO 6, LO 7			
Knowledge 1. Pharmacological groups and classification principles: definition of these groups 2. Pharmacodynamic and pharmacokinetic particularities of drug groups and mechanisms of pharmacological effects 3. Indications, contraindications, and adverse reactions of	Skills 1. Demonstrates analytical and synthetic abilities in solving tables, diagrams, and situational problems 2. Applies prescribing and selection particularities of drugs in diseases and pathological states 3. Integrates accumulated material in solving clinical cases 4. Selects first-choice drug groups in pathological conditions	Responsibility and autonomy The graduate assumes autonomous responsibility for: 1. demonstrating knowledge in the classification, pharmacodynamics, and pharmacokinetics of drugs 2. formulating well-founded conclusions regarding the correct and targeted selection of drugs based on pathogenesis 3. applying	

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 13/ 16	

drug groups 4. Clinical presentation of drug intoxications and principles of treatment	5. Identifies drug groups according to contraindications and adverse reactions	pharmacokinetic and pharmacodynamic characteristics for the correct selection of drugs 4. integrating the pharmacological properties of drugs to understand the treatment of diseases and pathological states
--	---	---

VIII. STUDENT'S INDIVIDUAL WORK

No.	Expected product	Achievement strategies	Assessment criteria	Completion date
1.	General and medical prescription exercises	Prescription of mandatory preparations in all dosage forms presented in the methodological guide, with prescriptions written according to the rules studied in general prescription writing. The signatura must indicate the route of administration and the pathology in which the preparation will be used.	Assessment of correctness in prescribing dosage forms, routes of administration, and the pathologies for which medicines are prescribed.	September–May
2.		Indication of drug groups and medicines used in the respective pathologies and pathological conditions.	Assessment of correctness in indicating drug groups and medicines specific to the pathologies and pathological conditions from the relevant topics.	September–May

IX. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

• *Teaching and learning methods used*

Pharmacology is taught through a blended approach that combines traditional instruction with interactive, student-centered teaching and assessment methods. The discipline includes lectures, laboratory classes, and seminars designed to support the gradual acquisition of theoretical knowledge, practical skills, and clinical reasoning in pharmacology.

Lectures provide the theoretical framework of the discipline and are delivered by the course instructors. Laboratory classes and seminars complement the lectures through oral discussions, test-based assessment, prescription-writing exercises, problem-based learning, case analysis, debates, and other interactive activities. These methods are intended to promote active student participation, deeper understanding of pharmacological concepts, and the ability to apply knowledge in clinical and preclinical contexts.

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 14/ 16	

Laboratory and seminar activities are organized individually, frontally, and in groups. Virtual laboratory demonstrations and audiovisual materials may also be used to illustrate pharmacological mechanisms, experimental methods, and clinically relevant drug effects. Students are encouraged to discuss core topics as well as more complex issues that require analysis, comparison, and justification of pharmacotherapeutic decisions.

Laboratory work contributes to the development of research-oriented thinking by familiarizing students with selected experimental methods, scientific analysis, and interpretation of pharmacological data. At the same time, it supports the development of professional competencies needed for the rational, safe, and targeted selection of medicines.

Information and communication technologies are integrated into teaching, learning, and extracurricular activities through PowerPoint presentations, video materials, virtual laboratory resources, and other digital educational tools.

- ***Applied teaching strategies/technologies (specific to the discipline)***

- Observation – students identify the main pharmacological groups used in different diseases and clinical conditions.
- Analytical reasoning – students analyze the pathogenesis of selected diseases and justify the choice of medicines used to relieve symptoms or target the underlying causes.
- Comparative analysis – students compare medicines from the same pharmacological group in terms of mechanisms of action, pharmacological effects, adverse reactions, indications, and contraindications.
- Classification – students apply classification criteria to organize medicines into pharmacological groups and subgroups.
- Therapeutic planning – students develop basic pharmacotherapeutic approaches by selecting appropriate drug groups for specific diseases and pathological conditions.
- Clinical case modeling – students analyze simulated clinical cases that include expected pharmacological effects, adverse reactions, contraindications, and principles of rational drug selection.
- Experimental reasoning – students formulate hypotheses related to pharmacological mechanisms and interpret experimental or virtual laboratory demonstrations.
- Interactive methods – brainstorming, multi-voting, round-table discussions, group interviews, case studies, creative controversy, focus groups, and portfolio-based learning.

- ***Assessment methods (including indication of the method of calculating the final grade)***

Continuous assessment is carried out throughout the semester and includes short tests on theoretical material and assessment of individual work, particularly general and medical prescription-writing exercises.

Periodic assessment is conducted during two integrative assessments (concluding) per semester. Each integrative assessment includes:

- a) assessment of theoretical knowledge through computer-assisted testing in Moodle, usually consisting of 25-30 test items, or through a written multiple-choice test;
- b) assessment of practical skills through written exercises, including general prescription writing for 10 medicines and medical prescription exercises for 10 diseases or pathological conditions.

Final assessment consists of a computerized examination in SIMU, comprising 50 test items.

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 15/ 16	

The final grade is calculated from two components:

- a) the average of six grades obtained during the integrative assessments: theoretical component, practical component, and individual work for each of the two assessments; this component accounts for 50% of the final grade;
- b) the grade obtained in the final computerized test, which accounts for 50% of the final grade.

Method of rounding grades at the assessment stages

Intermediate grades grid (annual average, grades from exam stages)	National grading system	Equivalent ECTS
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	
6.01-6.50	6.5	D
6.51-7.00	7	
7.01-7.50	7.5	C
7.51-8.00	8	
8.01-8.50	8.5	B
8.51-9.00	9	
9.01-9.50	9.5	A
9.51-10.0	10	

The average annual grade and the grades of all stages of the final examination (computer-assisted, testing, oral response) - all will be expressed in numbers according to the grading scale (according to the table), and the final grade obtained will be expressed in a number with two decimal places, which will be entered in the student's recordbook.

Failure to attend the exam without valid reasons is recorded as "absent" and is equivalent to a grade of 0 (zero). The student has the right to retake the failed exam twice.

X. RECOMMENDED BIBLIOGRAPHY:

A. Compulsory

1. Tripathi K. D. *Essentials of Medical Pharmacology*. 9th ed. New Delhi: Jaypee Brothers Medical Publishers; 2024.
2. Whalen K., Lerchenfeldt S. M., Giordano C. R. *Lippincott Illustrated Reviews: Pharmacology*. 8th ed. Philadelphia: Wolters Kluwer; 2022.
3. Lecture notes.

B. Additional

1. Ghicavii V., Bacinschi N., Stratu E., Pogonea I., Corețchi I., Țurcan L., Podgurschi L., Mihalachi-Anghel M. *Prescription Guide*. Chișinău, 2020.
2. Ritter J. M., Flower R. J., Henderson G., Loke Y. K., MacEwan D., Robinson E., Fullerton J. *Rang & Dale's Pharmacology*. 10th ed. Edinburgh: Elsevier; 2023.
3. Vanderah T. W., ed. *Katzung's Basic & Clinical Pharmacology*. 16th ed. New York: McGraw Hill; 2024.

	CD 8.5.1 CURRICULUM DISCIPLINE FOR UNIVERSITY STUDIES	Editorial team :	11
		Date:	20.01.2026
		Page 16/ 16	

4. Golan D. E., Loscalzo J., Namchuk M. N. *Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy*. 5th ed. Philadelphia: Wolters Kluwer; 2025.
5. Brunton L. L., Knollmann B. C., eds. *Goodman & Gilman's The Pharmacological Basis of Therapeutics*. 14th ed. New York: McGraw Hill; 2023.