MINISTRY OF EDUCATION AND SCIENCE OF THE KYRGYZ REPUBLIC
OSH STATE UNIVERSITY
INTERNATIONAL OF MEDICAL FACULTY

Department of Pathology, Basic and Clinical Pharmacology

Syllabus

Specialty (direction)	medical	science Course code	
Language of instruction	English	Discipline	Clinical Pharmacology
Academic year	2025-2026	Number of credits	3
Teachers	A. Momunova Sh. Mirzokulov M. Murzaeva M. Bakhtierova	Semester	VII
E-Mail	amomunova@oshsu.kg shmirzokulov@oshsu.kg mmurzaeva@oshsu.kg mbahtierova@osghsu.kg	Schedule according to the application " Osh State University Student"	https://myedu.oshsu.kg/# /
Consultation	Tuesday Thursday	Location	14:00-15:00/ 306, 405
Form of study Full	-time Full -time Full	time Course type:	mandatory

"Agreed"
Program Director, MD, Associate Professor
Bugubaeva M.M. _____

App 1

№	Full name	Degree	Position	E-mail	Achievements
1	**Aigul Momunova**	Candidate of Medical Sciences	associate Professor of the Department	amomunova@oshsu.kg	Author of about 50 scientific works, textbooks, lectures, methodical recommendations
2	**M. Bakhtierova**		Senior lecturer of the Department	**mbahtierova@osghsu.kg**	Author of about 3 scientific works, textbooks, lectures, methodical recommendations
3	**Mariia Murzaeva**		Lecturer of the Department	mmurzaeva@oshsu.kg	Author of about 9 scientific works, textbooks, lectures, methodical recommendations
4	**Shuhrat Mirzokulov**		Lecturer of the Department	shmirzokulov@oshsu.kg	Author of about 10 scientific works, textbooks, lectures, methodical recommendations

1. Course Description:

Course characteristics: It consists in consistent and purposeful implementation of the educational process. The requirements of teachers for students are based on the general principles of training in higher educational institutions of the Kyrgyz Republic.

1. Mandatory attendance of lectures.
2. Mandatory attendance at practical classes.
3. Active participation in the educational process: preparing theoretical material, writing prescriptions, solving situational problems and test tasks.
4. Delivery of border control at the set time according to the thematic plan.
5. Mandatory implementation and protection of the SRS at the set time according to the thematic plan.
6. Active participation of students in research work.

2.1 Introduction.

Clinical pharmacology is the main and important subject in the activity of a medical doctor. She studies the effects of the drug specifically at the patient's bedside, as well as in healthy people.

2.2. The purpose of the discipline: to teach students the methodology of choosing the most effective and safe medicines or their combinations based on knowledge of pharmacodynamics, pharmacokinetics, pharmacogenetics, pharmacoepidemiology, pharmacoeconomics, drug interactions, adverse drug reactions, principles of evidence-based medicine.

2.3. The objectives of the discipline are:

Students should know the content and significance of sections of clinical pharmacology, its concepts, terms and principles;

Tasks include:

- development of methods for the most effective and safe use of medicines;
- determination of the route of administration of the medicinal substance;
- monitoring the effect of the drug;
- prevention and elimination of adverse drug reactions

2 Course Objective:

- Students should know the content and significance of sections of clinical pharmacologyand its concepts, termsandprinciples.
- calculations of dosage regimensof prdrugs and different conditions of their pharmacokinetics in a patient.
- students should learn how to conduct clinical and pharmacological characterization of the main groupspof drugs used for the treatment of diseases;
- rational choice of specific medications and dosage regimen for a given patient inthe course ofцecce supervision;
- solving situational problems in clinical pharmacology;
- universal algorithm for selecting the optimal individualized pharmacotherapy based on clinical and pharmacological knowledge;
- prescribing medications to patients based on gender, age, concomitant diseasesa, and other characteristics.
- formation of students ' communication skills and interaction with the team, partners, patients and their relatives.
- students will master the main issues of general and private clinical pharmacology based on modernнachievements in the field of fundamental and clinical medicine from the standpoint of evidence-based medicine;
- students of FC and FD study the main groups of drugs used for the prevention, diagnosis and treatment of the most common and socially significant human diseases in the rehabilitationьof patients;
- study of the interaction of drugs and adverse drug reactions on the body, indications and contraindicationsoto the use of drugs;
- training students to carry out individualized, controlled, safe and effective pharmacotherapy based on the acquired knowledge, organize work with medicines andoobserve the rules for their storage;

PREREQUISITES

in the cycle of humanities disciplines: **Latin language**

in the cycle of professional disciplines: **Basic pharmacology**

Internal Diseases, **Pediatrics**

POST-REQUESTS

Hospital therapy, **Hospital Pediatrics**, **Surgical diseases**, **Obstetrics and Gynecology** , **ENT**

Learning Outcomes of the Discipline

By the end of the course student will be able to:

LO (learning outcome) Code of Learning outcomes and its wording	disciplines	competence
LO 8 – Able to apply basic knowledge in the field of therapeutic practice to solve professional tasks → To assess the pharmacological properties of medicinal products, their effects on morphofunctional and physiological processes of the body, as well as to identify possible adverse effects and drug–drug interactions in adults and children.	LOd-1 **Know:** Principles of rational choice of drug therapy in various pathologies, in the elderly, в during pregnancy and lactation, в depending on the functional state of the elimination organs, taking into account the interaction of drugs. Rules for storing medicines. **Be able to:** Evaluate the need for drug therapy choose a rational therapy с based on age та, gender, the nature of the course of the disease, concomitant conditions and diseases, and medications taken together. Assess the possible risk of drug side effects. Evaluate whether the medicinal product is stored correctly. **Own:** The ability to make a rational choice of pharmacotherapy agents, taking into account age, gender, the nature of the course of the disease, concomitant conditions and diseases, сов- and medications taken locally. Ability to assess the risk of adverse reactions to pharmacotherapy. Using the rating skill the correct storage of medicinal products.	PC-17 – Able and prepared to carry out basic therapeutic measures for the most common diseases and conditions in adults and children in outpatient settings and in hospital conditions. PC-18 – Able and prepared to provide medical care for acute diseases, conditions, and exacerbations of chronic diseases that are not life-threatening and do not require emergency medical care. PC-19 – Able and prepared to provide first medical (physician) aid in cases of urgent and life-threatening conditions, and to refer patients for planned or emergency hospitalization.
LO 11 – Able to apply basic knowledge in the field of research activities to solve professional tasks → To apply basic knowledge in pharmacology for the selection, justification, and rational use of medicinal products in solving professional tasks.	**Knows:** Features of dosage regimens of medicinal products **Can:** based on the knowledge of the pharmacological group of medicinal products вb, select the optimal, most effective and safe drug according to its pharmacological characteristics: pharmacokinetics, pharmacodynamics in life-threatening conditions **Owns:** algorithm for the use of drugs for common diseases and skills in providing assistance in life-threatening conditions **RO d-3** **Knows:** features of the drug dosage regimen pharmacokinetics, pharmacodynamics of drugs in and various diseases	**PC-32** – Able and prepared to plan and conduct scientific research. **SLC-2** – Able and prepared to master professional communication skills; to build interpersonal relationships, work in a team, constructively resolve conflict

	Methods for evaluating the clinical efficacy and safety of the main groups of medicines. - Main types of drug interactions. Methods of prevention and correction of NLR. **Can:** Evaluate the choice, effectiveness, and safety of drug use in a particular patient. Has the following skills: Taking into account the type, location and severity of the disease, the urgency of providing care and getting the effect, carry out: - choice of the type of therapy (systemic, local); - choice of a group of medicines;	situations, and show tolerance toward social, ethnic, confessional, and cultural differences. .

Dublin Descriptors for the discipline « Clinical Pharmacology »

№	Dublin Descriptors	Intended learning Outcomes for the discipline « Clinical Pharmacology »	Competences
1	**Knowledge and Understanding**	By the end of the course, the student will be able to demonstrate systematic and in-depth knowledge of the fundamental principles of pharmacology, including pharmacokinetics, pharmacodynamics, mechanisms of drug action, classification of medicines, and factors influencing drug efficacy and safety in the human body.	**Knowledge-based, systemic**
2	**Applying Knowledge and Understanding**	By the end of the course, the student will be able to apply pharmacological knowledge to explain the rationale for drug selection, dosage regimens, routes of administration, and therapeutic use of medicines in common clinical situations, taking into account patient-related factors.	Professional, instrumental
3	**Making Judgements**	By the end of the course, the student will be able to analyze pharmacological information, evaluate benefits and risks of drug therapy, recognize adverse drug reactions and drug–drug interactions, and formulate evidence-based conclusions regarding rational and safe use of medicines.	Analytical, systemic
4	**Communication Skills**	By the end of the course, the student will be able to clearly and accurately communicate pharmacological concepts, therapeutic decisions, and	Communicative, professional

		safety considerations in oral and written forms using appropriate medical and pharmacological terminology.	
5	**Learning Skills**	By the end of the course, the student will be able to independently acquire and critically analyze new pharmacological information, use evidence-based medical resources and drug databases, and demonstrate readiness for continuous professional development in accordance with the principles of lifelong learning.	Self-development, lifelong learning

1. The map of accumulation points

Subject	**Credits**	**Pract**	**ISW**	**Module 1 (25 points)**				**Module 2 (25 points)**				**Exam (50 points)**	
		40%	60%	Pract hours		ISW	РК (r)	Pract hours		ISW		К (r)	ИК (Е)
				Lec.	Pr.			Lecture.	Practical.				
Clinical Pharmacology	3	36	54	14	22	45/9		18	45/5				
Points				8	8	8	18	4	4	8	9		
Module and exam results				(M=tcp.+r+s) до 25 / 25				(M=tcp.+r+s) до 25 / 25				50	
				Rдоп. = M1 + M2 (30-50)									
Final assessment				I = Rдоп. + E								100	

Topics of practical classes on the discipline «Clinical Pharmacology»
For the 4rd year students
VII semester

№	Weeks	Topics	Hours		Points	
			Practical	**Lecture**		
1-module						
1	01.09-06.09	Introduction to clinical pharmacology. Main parameters of clinical pharmacokinetics and pharmacodynamics, their significance for rational prescribing drugs. https://www.youtube.com/watch?v=piM6Qw_115w	2	2	1	1

2	08.09-13.09	Clinical pharmacology of antihypertensive drugs. Clinical and pharmacological approaches to the choice and use of drugs in hypertension. https://www.youtube.com/watch?v=V2sEay-E-Ro	2	1	1	1
3	15.09-20.09	Clinical pharmacology of antianginal drugs, antithrombotic drugs. https://www.youtube.com/watch?v=9xSqezCMHnw	2	1	1	1
4	22.09-27.09	Clinical pharmacology of antiarrhythmic drugs. https://www.youtube.com/watch?v=9xSqezCMHnw	2	2		
5	29.09-04.10	Clinical and pharmacological approaches to choice medications used in diabetes mellitus. https://www.youtube.com/watch?v=LWDQyaKVols	2	1	1	1
6	06.10 – 11.10	Clinical and pharmacological approaches to choice drugs used for bronchobstruction. (BA. COPD). https://www.youtube.com/watch?v=-DVZ9pl0rGY	3	1	1	1
7	13.10 – 18.10	Clinical and pharmacological approaches to choice drugs used for https://www.youtube.com/watch?v=E0IBMWQDEH4 Peptic ulcer. Gastritis.	3	2	1	1
8	20.10 – 25.10	Clinical pharmacology of antibacterial drugs. Clinical and pharmacological approaches to the selection and use antibacterialagents. https://www.youtube.com/watch?v=TeZny8Zkyvk	3	2	1	1
9	27.10 – 01.11	Clinical pharmacology of glucocorticoids, nonsteroidal	3	2	1	1

		anti-inflammatory agents. Clinical and pharmacological approaches to the choice of steroid and non-steroid anti-inflammatory drugs. https://www.youtube.com/watch?v=k5yZBW7aa-A				
Total:			**22**	**14**	**50**	

Topics of ISW on the discipline «Clinical Pharmacology»
For the 4rd year students
VII semester

№	Topic	Type of discussion	Hours	Control	Resourses	Location	Deadline
1.	Features of FC of drugs in different age periods (fetus, newborn period, children, elderly people), in pregnant and lactating women. Clinical drug research, evidence-based medicine. Sources of clinical and pharmacological information.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	4	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
2.	Clinical pharmacoeconomics and pharmacoepidemiology. The formula system. Clinical pharmacogenetics	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	4	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
3	Iron deficiency anemia . B12 - deficiency anemia	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses,	2	checklists; assessment of ISW(assessment tools); MCQs; case report analysis;	https://www.elsevier.com/search-results?query=Pharmacology	App 3	**Before module week**

		and issue prescriptions),Peer Teaching, РИ, D.		student-led presentations	https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology		
4	Clinical pharmacology of psychotropic drugs.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	Pharmacology - ANTIPSYCHOTICS (MADE EASY)	App 3	**Before module week**
5	Acute coronary syndrome, arterial hypertension, metabolic syndrome 2. Rhythm disorder syndrome, circulatory insufficiency	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
№	**Topic**	Type of discussion	**Hours**	**Control**	**Resourses**	**Location**	**Deadline**
1	Clinical pharmacology of antiparasitic drugs. Drug interactions.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	Anti-parasitic Drugs Pharmacology: Anti-protozoal Drugs + Anti-helminthic Drugs and their mnemonics	App 3	**Before module week**
2	Pharmacotherapy of pain.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses,	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis;	https://www.elsevier.com/search-results?query=Pharmacology	App 3	**Before module week**

		and issue prescriptions),Peer Teaching, РИ, D.		student-led presentations	https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology		
3	COPD, bronchial asthma, chronic pulmonary heart disease, respiratory failure	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
4	Acute coronary syndrome, arterial hypertension, metabolic syndrome 2. Rhythm disorder syndrome, circulatory insufficiency	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
5	Acute rheumatic fever, CRBS, heart defects, rheumatoid arthritis, osteoporosis, reactive arthritis, gout	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?te	App 3	**Before module week**

					rm=pharmacology		
6	Rational pharmacotherapy in the treatment of pancreatitis, cholecystitis, hepatitis, cirrhosis of the liver.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
7	Acute and chronic pyelonephritis, acute and chronic glomerulonephritis, CRF Therapeutic drug monitoring. Calculation of the dosage regimen in patients with CRF and hemodialysis	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**4**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
8	Iron deficiency anemia . B12 - deficiency anemia	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**2**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
9	Hyper and hypothyroidism Rational drug pharmacotherapy.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses,	**2**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis;	https://www.elsevier.com/search-results?query=Pharmacology	App 3	**Before module week**

		and issue prescriptions),Peer Teaching, РИ, D.		student-led presentations	https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology		
10	Clinical pharmacology of sulfonylureas.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**2**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
11	Clinical pharmacology of antifungal, antituberculous, antiviral drugs	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**2**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
12	Rational pharmacotherapy in acute and chronic leukemia.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**2**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?te	App 3	**Before module week**

					rm=pharmacology		
13	Clinical pharmacotherapy of parathyroid hormone preparations.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**2**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**
14	Pharmacotherapy for metabolic diseases.	CBL,TBL,PBL, RBL,DBL, SDL, SBL(to appropriately prescribe drugs, calculate doses, and issue prescriptions),Peer Teaching, РИ, D.	**2**	checklists; assessment of ISW(assessment tools); MCQs; case report analysis; student-led presentations	https://www.elsevier.com/search-results?query=Pharmacology https://www.sciencedirect.com/search?qs=Pharmacology https://www.coursera.org/search?query=Pharmacology& https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology	App 3	**Before module week**

Course Policy

1. Be active in practical classes;
2. Be able to work in a team;
3. Have an idea of the topic of the upcoming lecture, be ready for feedback at the lecture;
4. Must complete tasks daily according to the schedule of lectures, practical classes and SROP and SRO classes;
5. In case of lack of activity and failure to complete the task, penalties are applied and the score for the practical lesson is reduced;
6. Participate in discussions, complete individual and group tasks, and research other resources.
7. Do not skip classes without a valid reason.
8. Have a neat appearance.
9. Be active in practical classes.

10. Don't be late for classes.
11. Keep the workplace clean.
12. Can not use Chat GPT
1. The student is recommended to have the necessary technical attitude (laptop, smartphone)
2. Have a stable internet connection
3. Pre-installed communication programs ZOOM, Webex, etc.
4. Be able to get in touch during distance learning according to the schedule
5. Check the availability of tasks on the Platonus AIS platform in a timely mannerPlatonus
6. They must keep track of the end dates for completing tasks.
7. Complete and send completed tasks on time via the Platonus AIS platforms, Mail.ru. Whatsapp for the allotted time period.
If you miss each lecture session, the assessment of the boundary control is reduced by 1 point, and if you miss each SRSP class, the assessment for
SRO is reduced by 2 points. The rating of admission to the exam consists of the average score of a practical lesson, SRS, and border control.
The final admission rating for the subject must be at least 50 points (60%).

Appendix 2

Criteria for evaluating the learning outcomes of disciplines

№	Practical Classes	Module	Self Work	Lectures	Total

	Attendance	AActivityonpract.classses	Notes	Work-groups	MCQ	Situationaltasks	Total points for pr. cl.	Situationaltasks	MCQ	Total points for module	Thedesignofthe Paper	Discussingof Topic	Answers to control questions	Total points for SW	Attendance	Notes	Answers to control questions	Total points for lecture	
Max. points	1	2	1	2	1	1	**8**	10	8	**18**	2	3	3	**8**	4	6	6	**16**	**50**

Topics **Types of training works**	**Introductiontoclinicalpharmacology.**	**Antihypertensivedrugs,**	**Drugsfor CHF.**	**Antiarrhythmicdrugs.**	**Antianginaldrugs.**	**Drugsaffectingon Respiratorysystem.**	**Drugs affecting on G. I. T.**	**NSAIDs.**	**Antibiotics consideration, Sulfonamides, Cotrimoxazole, Quinolones B-lactam antibiotics**	**Self Work**	**Lecture**	**Module**	**Total**
Attendance	1	1	1	1	1	1	1	1	1				
Student activity (student response with explanation on the Board)	2	2	2	2	2	2	2	2	2				
Notes	1	1	1	1	1	1	1	1	1				
Group work (crossword puzzles, games)	2	2	2	2	2	2	2	2	2				

The discussion of situational tasks	1	1	1	1	1	1	1	1	1				
MCQ	1	1	1	1	1	1	1	1	1				
Total:	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**16**	**8**	**16**	**50**
Total points				**100**									

Check list for practical training.		
Form of control Evaluation		**Evaluation criteria**
Oral discussion, dose calculation, prescribing	**Perfectly** Matches the ratings: A (4.0; 95-100%); A- (3.67; 90-94%)	Actively participates in the work, shows original thinking, shows deep knowledge of the material, uses scientific achievements of other disciplines in the discussion. It uses medicines in the most appropriate dosage form, depending on age, gender, and functional characteristics. Calculates doses by various methods and determines the multiplicity and duration of drug
	Well use Corresponds well to the estimates: B+ (3.33; 85-89%) B (3.0; 80-84%) B - (2.67; 75-79%) C+ (2.33; 70-74%)	Participated in the work, showed knowledge of the material, made unprincipled inaccuracies or fundamental errors corrected by the teacher himself. Calculates the dose of the drug.
	Satisfactorily Meets the following estimates: C (2.0; 65-69%) C- (1.67; 60-64%) D+ (1.33; 55-59%) D- (1.0; 50-54%)	When working in a group, he was passive, made inaccuracies and unprincipled mistakes, and had great difficulties in organizing the material.
	Unsatisfactory about FX (0.5; 25-49%) F (0; 0-24%)	He did not take part in the work of the group, answering questions from the teacher, made fundamental mistakes and inaccuracies, and did not use scientific terminology in his answers.
Discussion of a clinical case (CBL-Case based Discussion). Small group work		
Form of control Assessment Evaluation criteria		
Discussion Clinical case discussion (CBL-Case based Learning). Working in small groups	**Perfectly** Matches the following grades: A (4.0; 95-100%); A- (3.67; 90-94%)	Students who were assignedto a small group actively participated inthe clinical situation это время assessment and showed their logical skills at this time thinking, fully correctly solved the clinical situation during the discussion.
	Well Corresponds well to the estimates: B+ (3.33; 85-89%) B (3.0; 80-84%) B - (2.67; 75-79%) C+ (2.33; 70-74%)	Students assigned to the subgroup took an active part in the discussion of the clinical situation. When discussing the clinical situation, students from the subgroup coped with errors or errors of position, corrected.
	Satisfactorily Meets the following estimates: C (2.0; 65-69%) C- (1.67; 60-64%) D+ (1.33; 55-59%) D- (1.0; 50-54%)	Students enrolled in a small group were passive in discussing the clinical case; when discussing the clinical case, students from a small group performed it using reference literature/sources, making weak and inconsistent mistakes.
	Unsatisfactory FX (0.5; 25-49%) F (0; 0-24%)	They were unable to find the correct solution to the clinical situation, did not participate in the work of the group, made mistakes and inaccuracies, and did not use scientific terminology when answering.
Checklist for SRO Presentation of the topic		
Form of control Assessment Evaluation criteria		
Presentation of the topic	**Perfectly** Matches the ratings: A (4.0; 95-100%); A- (3.67; 90-94%)	The presentation was made independently, on time. Use of at least 3 literary sources. The slides are informative and concise. During the defense, the author demonstrates deep knowledge of the topic. Makes no mistakes when answering questions during a discussion.
	Well Corresponds well to the estimates: B+ (3.33; 85-89%) B (3.0; 80-84%) B - (2.67; 75-79%) C+ (2.33; 70-74%)	The presentation was made independently, on time. Use of at least 3 literary sources. The slides are informative and concise. During the defense, the author demonstrates good knowledge of the topic. Makes unprincipled mistakes when answering questions that he corrects himself.
	Satisfactorily Meets the following estimates: C (2.0; 65-69%) C- (1.67; 60-64%)	The presentation was made independently, on time. Use of at least 3 literary sources. The slides are not informative. When defending, the author makes fundamental mistakes when answering questions.

	D+ (1.33; 55-59%) D- (1.0; 50-54%)	
	Unsatisfactory FX (0.5; 25-49%) F (0; 0-24%)	The presentation was not delivered on time. Less than 3 literary sources were used. The slides are not informative. When defending, the author makes gross mistakes when answering questions. It doesn't know its own content.
		Topic
Summary The topic	**Summary Perfectly** Matches the following grades: A (4.0; 95-100%); A- (3.67; 90-94%)	The abstract was completed independently within the established time frame. Literary surnames not lower than 3 were used. The abstract is informative and effective. During the defense, the author showed deep knowledge of the topic. Makes no mistakes when answering questions during a discussion.
	Well Corresponds well to the estimates: B+ (3.33; 85-89%) B (3.0; 80-84%) B - (2.67; 75-79%) C+ (2.33; 70-74%)	The abstract was completed independently within the established time frame. Literary surnames not lower than 3 were used. The abstract is informative and effective. During the defense, the author demonstrated good knowledge of the topic. Self when making corrections, it makes inconsistent mistakes when answering questions.
	Satisfactorily Meets the following estimates: C (2.0; 65-69%) C- (1.67; 60-64%) D+ (1.33; 55-59%) D- (1.0; 50-54%)	The abstract was completed independently within the established time frame. Literary surnames not lower than 3 were used. Abstract without content. When defending, the student makes mistakes when answering questions.
	Unsatisfactory FX (0.5; 25-49%) F (0; 0-24%)	The abstract was not submitted at the appointed time. Literary lines below 3 were used. Abstract without content. When defending, the author makes serious mistakes when answering questions. In his material, he does not know perfection.
Checklist for evaluating the analysis of scientific articles (RBL-research-based learning elements)		
A 4.0 95-100 A 3.67 90-94	Selecting a database of sources for reviewing scientific literature. Defining goals and objectives. Search planning and analysis methods. Analysis of scientific articles. The analysis reflects the results of research on key issues and issues of the topic under study. Getting conclusions on a topic. Offer recommendations for solving this problem. At least 5 scientific articles were analyzed. Use of literature of the last 5 years in the amount of at least 5-7 sources.	
3.33 85-89 3.0 80-84 2.67 75-79	Selecting a database of sources for reviewing scientific literature. The goal and objectives are defined. Planned search and analysis methodology. Complete analysis of scientific articles. The analysis reflects the results of research on key issues and issues of the topic under study. The conclusions drawn on the topic correspond to the tasks set. Recommendations for solving this problem are proposed. At least 4 scientific articles were analyzed. Using the literature of the last 10 years in the amount of less than 5 sources	
From 2.33 70-74 From 2.0 65-69 From 1.67 60-64 The	choice of the database of sources of the review of scientific literature is not complete. The set goal and objectives н do not fully reveal the topic under study. The analysis method is not defined. The analysis does not reflect the results of research on key issues and issues of the topic under study. Conclusions on the topic are available. Recommendations for solving this problem do not correspond to the topic. At least 2-3 scientific articles were analyzed. Literature of the last 10 -15 years in the amount of at least 5 sources was used	
FX 0.5 25-49 F 0 0-24	The analysis of scientific articles was not carried out.	

Appendix 3

Educational resources

Electronic resources, including, but not limited to: databases, animation simulators, professional blogs, websites, and other electronic reference materials (for example: videos, audio, digests)	(databases, animation, modeling, professional blogs, websites, and other electronic reference materials. For example: video, audio, links-digests)
Electronictextbooks	**Main literature:** K. D. Tripathi Essentials of Medical Pharmacology – 8th Edition – India 2018. – 1080p. Lippincotts Karen Whalen Pharmacology – 7th edition- Florida 2018. – 958 p. Bertram G Katzung Basic and Clinical Pharmacology - 14th Edition - 2015 – 750 p. Goodman and Gilman The Pharmacological Basis of Therapeutics 2018-550p. **Additional literature:** Satoskar, Bhandarkar and Rege's text book of Pharmacology 2009 – 620 p. HL Sharma and KK Sharma's textbook 2017 – 540 p. GobindRaiGarg Review of Pharmacology 2018 – 470 p. Muratov et al. Methodical manual for self study on basic Pharmacology – Osh, Kyrgyzstan 2020. – 183p.

	Internet: 1. https://www.elsevier.com/search-results?query=Pharmacology 2. https://www.sciencedirect.com/search?qs=Pharmacology 3. https://www.coursera.org/search?query=Pharmacology& 4. https://pubmed.ncbi.nlm.nih.gov/?term=pharmacology 5. https://www.ijp-online.com/ 6. https://www.pakmedinet.com/pjpharma 7. https://ibooks.oshsu.kg/book/?lg=1&id_parent=376&id1=1899&id4= 8. https://ibooks.oshsu.kg/book/?lg=1&id_parent=376&id1=1890&id4= .-