

**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)	General medicine	Course code	560001
Language of instruction	English	Discipline	Basic Pharmacology
Academic year	2025-2026	Number of credits	3
Teachers		Semester	V 20/28/7
E-Mail	App. №1	Schedule according to the application “ Osh State University Student”	https://myedu.oshsu.kg/#/
Consultations	App. №3	Location	IMF
Form of study Full	Full-time	Course type:	Compulsory

Osh, 2025

Information about the instructors:

№	Full name	Degree	Position	E-mail	Achievements
1					

EXPLANATORY MEMORANDUM

Discipline of Basic Pharmacology is borderline position at the junction of the theoretical and clinical disciplines. The knowledge gained in the study of most of the theoretical and biomedical disciplines, students are required to learn the basic provisions of the pharmacodynamics and pharmacokinetics of drugs. The knowledge acquired in the pharmacology, used in the study of clinical disciplines.

Pharmacology in the system of higher medical education is one of the fundamental sciences and provides a theoretical basis for the rational use of medicines in medical practice. Based on courses of normal and pathological physiology, biochemistry pharmacology is the link between medical and biological and clinical disciplines. The intermediate position between theoretical and clinical disciplines contributes to the development of many scientific directions developed by it. New directions in the field of pharmacology include both applied aspects related to obtaining new drugs and their introduction into medical practice, as well as fundamental problems. Pharmacology has a great influence on the development of medical and biological disciplines. For experimenters, the main value of pharmacological agents lies in the fact that they represent ample opportunities to manage many biochemical and physiological processes. The progress of pharmacology inevitably influences the development of clinical disciplines. The last years were marked by the rapid development of pharmacology, the emergence of new groups of drugs, resulting in pharmacotherapy has become a universal treatment for most diseases. Thus, pharmacology occupies an important place in the system of medical education, so knowledge of pharmacology is necessary for a pharmacist of any profile.

Aims and objectives of discipline.

The purpose and objective of teaching pharmacology at the faculty is to teach students to choose the best, most effective and least dangerous drug to its pharmacological characteristics (pharmacokinetics, pharmacodynamics, mechanism of action) for a given pathology replace one drug to another if possible adverse reactions (based on the knowledge of pharmacological characteristics of groups of drugs and characteristics of the individual drugs.) Instill in students the skills of writing prescriptions, the experiment on laboratory animals using pharmacological agents, working with the literature, including books and monographs, the ability to read charts, drawings, diagrams, obtained with recording devices and equipment.

To teach the methodologies for selecting the most effective and safe medicines or their combinations, taking into account the knowledge of pharmacodynamics and pharmacokinetics, pharmacogenetics, pharmacoeconomics, drug interactions, undesirable drug reactions, principles of evidentiary discipline.

Pre-requisites:

Molecular Biology and Medical Genetics, Biochemistry, Physiology 1-2, Anatomy 1-2, Latin.

Post-requisites: Therapy, Pediatrics.

Learning outcomes of the discipline.

- Applies knowledge and understanding of:
- Determines methods for obtaining medical information, based on the comprehensive principles of evidence-based medicine; information computer systems in medicine and healthcare; sources of information;
 - Applies knowledge of the classification of drugs, general principles of pharmacodynamics and pharmacokinetics, mechanisms of action, indications and contraindications for the use of drugs in pediatrics, main, side and toxic effects;
 - Determines indications and contraindications for prescribing specific medications, recognizes side effects of pharmacotherapy; identify groups of drugs for the treatment of certain diseases in children and adolescents, explain the mechanism of action of drugs prescribed by specialists based on the etiology and pathogenesis of diseases, correctly prescribe combination therapy;
- Formulates judgments:
- Predicts possible drug interactions;
 - Advises patients about the possibility of side effects of medications;
- Study skills or learning ability:
- Uses clinical thinking when choosing medications in children with major internal disease syndromes;

- Uses normative, reference and scientific literature to solve professional problems; analyze medical information based on the comprehensive principles of evidence-based medicine, based on finding solutions using theoretical knowledge, use regulatory, reference and scientific literature to solve professional problems;

Communication skills:

- Has the ability to communicate information, ideas, problems and solutions to both specialists and non-specialists.

A set of competencies:

Code of Learning outcomes and its wording	The code of competence of the General Educational Program and its wording
<p>LO8 – Able to apply basic knowledge in the field of medical activities to solve professional problems.</p> <p>LO11 – Able to apply basic knowledge in the field of research activities to solve professional problems.</p>	<p>IC-2 - capable and ready to use information, bibliographic resources and information and communication technologies, taking into account the basic requirements of information security;</p> <p>PC-17 - capable and ready to carry out basic treatment measures for the most common diseases and conditions (in adults and children in outpatient and inpatient settings);</p> <p>PC-18 - capable and ready to provide medical care for acute diseases, conditions, exacerbation of chronic diseases that are not accompanied by a threat to the patient's life and do not require emergency medical care;</p> <p>PC-19 - capable and ready to provide first aid in the event of emergency and life-threatening conditions, refer patients for hospitalization on a planned and emergency basis;</p> <p>PC-31 - capable and ready to analyze and publicly present medical information based on evidence-based medicine;</p>

Calendar and thematic plan of lectures

№	Week	Topic name	Lecture	
			Number of hours	Points
1	1 st week	Drugs affecting the blood Coagulation, Bleeding and Thrombosis.	2	10
2	2 th week	Antianginal Drugs. Cardiac Glycosides and Drugs for Heart Failure.	2	10
3	3 th week	Antihypertensive drugs. Diuretics.	2	10
4	4 th week	Drugs affecting on Respiratory system	2	10
5	5 th week	Drugs affecting on G.I.T.	2	10
6	6 th week	Antibiotics Part -1: General consideration.	2	10
7	7 th week	Sulfonamides, Cotrimoxazole, Quinolones. Beta-Lactam Antibiotic	2	10
8	8 th week	Antibiotics Part -2: Macrolide, Lincosamide, Glycopeptide and Other Antibacterial Antibiotics.	2	10
9	9 th week	Urinary Antiseptic. Aminoglycosides Tetracyclines and Cloramphenicol	2	10
10	10 th week	Antituberculous Drugs.	2	10
Total:			20h	10

Calendar and thematic plan of **practical classes**

№	Week	Topic name	Practical lesson	
			Number of hours	Points
1	1 st week	Drugs affecting the blood Coagulation, Bleeding and Thrombosis.	2	15
2	2 th week	Antiarrhythmic Drugs.		
3	3 th week	Drugs for Heart Failure/.Cardiac Glycosides	2	15
4	4 th week	Antianginal Drugs. Diuretics.	2	15
5	5 th week	Antihypertensive drugs.	2	15
6	6 th week	Drugs affecting on Respiratory system	2	15
7	7 th week	Drugs affecting on G.I.T.	2	15
8	8 th week	Antimicrobial Drugs General consideration.	2	15
9	9 th week	Sulfonamides, Cotrimoxazole, Quinolones.	2	15
10	10 th week	Beta-Lactam Antibiotic Macrolide, Lincosamide, Glycopeptide and Other Antibacterial Antibiotics.	2	15
11	11 week	Urinary Antiseptic. Aminoglycosides Tetracyclines and Cloramphenicol.	2	15
12	12 week	Antituberculous Drugs.	2	15
13	13 week	Antifungal Drugs. Anthelmintic, Antiprotozoal Drugs	2	15
14	14 week	Antimalarial Drugs/ Antiviral Drugs.	2	15
			28h	30

ISW organization plan

№	Topics	Assignment for independent work of the student	Hours	Assessment means	Points	Literature	Submission deadline
1	Drugs that affect the immune system.	Report Prezi presentation MCQ	1	Independent study of the material, MSQ, preparing an essay or presentation, rbl.	5	App. № 4	Before module week
2	Immunosuppressive properties of cytostatics. Application in medicine.	Report Prezi presentation MCQ	1	Independent study of the material, MSQ, preparing an essay or	5	App. № 4	Before module week

				presentation, rbl.			
3	Pharmacotherapy of cerebral disorders.	Report Prezi presentation MCQ	1	Independent study of the material, MSQ, preparing an essay or presentation, rbl.	5	App. № 4	Before module week
4	Pharmacotherapy of Iron deficiency anemia . B12 - deficiency anemia.	Report Prezi presentation MCQ	1	Independent study of the material, MSQ, preparing an essay or presentation, rbl.	5	App. № 4	Before module week
5	Anticancer Drugs	Report Prezi presentation MCQ	1	Independent study of the material, MSQ, preparing an essay or presentation, rbl.	5	App. № 4	Before module week
6	Antiseptics, Desinfectants and Ectoparasitocides.	Report Prezi presentation MCQ	1	Independent study of the material, MSQ, preparing an essay or presentation, rbl.	5	App. № 4	Before module week
7	Antibiotic resistance.	Report Prezi presentation MCQ	1	Preparing an essay or presentation, rbl.	5	App. № 4	Before module week

Discipline Policy:

Requirements for students:

1. Be active in practical activities;

2. Be able to work in a team;
3. Have a presentation on the topic of the forthcoming lecture, be ready to give feedback on the lecture;
4. Must perform daily tasks according to the schedule of lecture, practical classes and classes SROP and SRO;
5. In case of lack of activity and in case of non-fulfillment of the task, measures of punishment are applied and the score on practical training is reduced;
6. Participate in discussions, perform individual and group tasks, explore and other resources;
7. Do not skip classes without respectful reasons;
8. Have a tidy appearance;
9. To show activity in practical classes;
10. Do not miss classes;
11. Keep the working place clean.

Penalty points

If you miss each lecture session without a valid reason and without further training, it is reduced by 1 point, if you miss each practical lesson, it is reduced by 1 point. The rating of admission to the exam consists of the average score of the practical lesson, the SRS, and the boundary control.

The final rating of admission to the exam in the subject must be at least 61 .

Methods of teaching and teaching (small groups, discussion, situational tasks, work in pairs, presentations, case studies, etc.).

- Lectures – overview. for on-line using digital technologies, webinars on the ZOOM platform, WEBEX MEET, etc.
- Practical exercises: working in small groups. mode on completing tasks presented in the “Task” module and discussion in on-line mode or in the “Task” module chat or on other information platforms)

Independent work of students - work with literature, performance of tasks and exercises, preparation and protection of thematic abstracts and presentations.

Criteria and rules for evaluating knowledge

Assessment of the level of development of students ' competencies

Practical class

Assessed competence	Points			
	30	20	10	5
Knowledge Orally, written response or testing	The student showed a deep understanding of the topic of the lesson, the ability to think logically, accurately and creatively managed to complete all tasks	The presentation allowed small gaps, but showed a good knowledge of the subject material, was able to solve test tasks, showed the ability to think logically, in solving a crossword puzzle	The student showed superficial knowledge on the topic of knowledge, incomplete and inconsistent answers to questions. There were difficulties or mistakes that were corrected after several additional questions from the teacher	The presentation shows ignorance, misunderstanding of the most important part of the educational material, made serious mistakes in the analysis of the theoretical material, failed to correct after several leading questions from the teacher.
Testing	90-100% correct answers	75-89% correct answers	50-74% correct answers	less than 50% of correct answers
Practical skills for solving situational problems	The student gave a deep analysis of the situation, managed to apply theoretical knowledge, correctly solved situational problems and made correct conclusions.gave a deep analysis of the proposed situation, gave reasonable and complete answers to all questions.	The student analyzed the situation, but made minor mistakes that do not affect the overall conclusions, and gave the correct answer to a typical problem.	The student gave the correct answer, but could not analyze the situation, could not cope with the application of the theory in a new situation, gave a superficial analysis	The Student could not solve the problem and analyze the situation, could not interpret the research data.

Self Work

Assessed competence	Points			
	10	7	5	3
Correspondence of the Paper content to the topic and tasks	The content of the essay fully corresponds to topic and to objectives	The content of the essay fully corresponds to topic and to objectives	The content of the essay is not fully consistent with the topic and to objectives	The content of the essay does not match the theme and the task

Completeness and consistency of the topic disclosure	The topic is fully disclosed, the material is presented in a competent language, in a logical sequence with the exact use of specialized terminology and symbols in the volume provided by the program. Illustrations of good quality, confirming theoretical provisions	The theme is completely opened, the material is presented in the volume, predusmotrena program, there is a minor error in the consistency of presentation, illustrations (graphs, tables) confirming theoretical provisions	The subject of the abstract revealed insufficient, uninformative	The topic of the essay is not disclosed does not match the theme
The ability to synthesize material, to draw conclusions	Material generalized, made clear findings	Material generalized, made the right conclusions	There are inaccuracies or errors in the content	The material is not generalized, there are no conclusions.
Practical skills Solving situational problems	The student gave a deep analysis of the situation, managed to apply theoretical knowledge, and correctly solved a typical problem.	The student analyzed the situation, but made minor mistakes that do not affect the overall conclusions, and gave the correct answer to a typical problem.	The student gave the correct answer, but could not analyze the situation, did not cope with the application of the theory in a new situation, gave a superficial analysis	The student could not solve the problem and analyze the situation, and could not interpret the research data.
Testing	90-100% correct answers	75-89% correct answers	50-74% correct answers	less than 50% of correct answers

Module

Assessed competence	Points			
	10	7	5	3
Knowledge Orally, written response or testing	The content of the student's oral or written response fully corresponds to the question, contains all the necessary theoretical facts and reasonable conclusions, and the presentation is logically competent 90-100% correct answers during testing	There are small gaps in the presentation that do not distort the logical and informational content of the answer. The presentation is based on an understanding of the theoretical material 75-89% correct answers during testing	The presentation of the material shows a General understanding of the issue. The topic is revealed inconsistently, incompletely, mistakes were made in the definition of concepts, the use of terminology. 50-74% correct answers at testing	The presentation shows ignorance, misunderstanding of the most important part of the educational material, serious errors in the definition of concepts, the use of terminology Less than 50% of correct answers
Practical skills Solving situational problems	The student gave a deep analysis of the situation, managed to apply theoretical knowledge, and correctly solved a typical problem.	The student analyzed the situation, but made minor mistakes that do not affect the overall conclusions, and gave the correct answer to a typical problem.	The student gave the correct answer, but could not analyze the situation, did not cope with the application of the theory in a new situation, gave a superficial analysis	The student could not solve the problem and analyze the situation, and could not interpret the research data.
Testing	90-100% correct answers	75-89% correct answers	50-74% correct answers	less than 50% of correct answers

The map of accumulation points

No	Practical Classes	Module	Self Work	Lectures	Р. 6.
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	Activity onpract. classes	Notes	Participation in research	Work ingroups	MCQ	Situational tasks	Total points for pr.cl.	Situational tasks	MCQ	Total points for module	The design of the Paper	Disclosing of Topic	Answers to control questions	Total points for SW	Attendance	Notes	Answers to control questions	Total points for lecture	
Max. points	10	2	5	4	5	4	30	10	20	30	5	15	10	30	5	15	10	30	30

Topics	Types of training works	Drugs affecting on Respiratory system	Drugs affecting on G.I.T.	Antihypertensive drugs	Diuretics	Drugs for CHF.	Antianginal drugs	Antiarrhythmic drugs	Drugs affecting blood formation	Drugs affecting the blood coagulation.	Self Work	Lecture	Module	Total
Attendance		30	30	30	30	30	30	30	30	30				
Student activity (student response with explanation on the Board)		30	30	30	30	30	30	30	30	30				
Notes		30	30	30	30	30	30	30	30	30				
Group work (crossword puzzles, games)		30	30	30	30	30	30	30	30	30				
The decision of situational tasks		30	30	30	30	30	30	30	30	30				
MCQ		30	30	30	30	30	30	30	30	30				
Total:		30	30	30	30	30	30	30	30	30	30	30	30	30
Total points						30								

Topics	Types of training works	NSAIDs, Antipyretic Agents	Antibiotics (part #1) General considerations,	Antibiotics (part #2) Tetracyclines,	Antimycobacterial Agents	Antileprotic, Antifungal	Antimalarial Agents	Antiviral drugs	Antiprotozoal Anthelmintic Agents	Self Work	Lecture	Module	Total
Attendance		30	30	30	30	30	30	30	30				
Student activity (student response with explanation on the Board)		30	30	30	30	30	30	30	30				
Notes		30	30	30	30	30	30	30	30				
Group work (crossword puzzles, games)		30	30	30	30	30	30	30	30				

The decision of situational tasks	30	30	30	30	30	30	30	30	30				
MCQ	30	30	30	30	30	30	30	30	30				
Total:	30	30	30	30	30	30	30	30	30	30	30	30	30
Total points	30												

Evaluation according to e-journal

Score	points
5	25-30
4	20-24
3	11- 19
2	1-10

Appendix № 4

Lliterature:

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.
 Gobind Rai Garg 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/piipharma>
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=

Нормативно-правовые акты	Устав ОшГУ
Учебники (библиотека)	KD Thripati

«УТВЕРЖДЕНО»

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«СОГЛАСОВАНО»

Руководитель ООП, к.м.н., доцент Бугубаева М.М.



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