

ONTUSTIK QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»	Department of Pathology and Forensic Medicine Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology Department of Propaedeutics of Internal Diseases	11-2025 Page 1of 48
Working curriculum of the discipline "Respiratory system in pathology" (Syllabus)			

Syllabus

Working curriculum of the discipline "Respiratory system in pathology"

Educational program 6B10115 "Medicine"

1.	General information about the discipline		
1.1	Course Code: RSP 3305	1.6	Academic year: 2025-2026
1.2	Course name: Respiratory system in pathology	1.7	Course: 3
1.3	Prerequisites: General pathology, respiratory system in normal	1.8	Semester: 5
1.4	Postrequisites: Basics of internal diseases	1.9	Number of credits (ECTS): 5
1.5	Cycle: SD	1.10	Component: IC
2.	Description of the discipline		
The formation of fundamental knowledge on the basics of semiotics, syndromology, physical examination methods, etiology, pathogenesis, morphogenesis of the respiratory system, mastering the skills of selection and analysis of the effectiveness of diagnostic methods and properties of drugs for the treatment of diseases, taking into account the principles of evidence-based medicine and patient-centered approach.			
3.	Summative Assessment Form		
3.1	● Testing	3.5	Coursework
3.2	Writing	3.6	Essay
3.3	Oral	3.7	Project
3.4	● OSPE/OSKE or practical skills assessment	3.8	Other (specify)
4.	Objectives of the discipline		
Formation of a holistic understanding of the pathology of the respiratory system, based on symptoms and syndromes, as well as on the methods of their study. Ensuring the achievement of the final learning outcomes based on the joint study of the pathology of the respiratory system on the propaedeutics of internal diseases with fundamental disciplines. Formation of clinical thinking skills based on knowledge of the pathophysiological mechanisms of the course, pathoanatomical changes, complications and outcome of diseases, physical and clinical laboratory methods of examination and the choice of drugs in adults with the main clinical syndromes in the pathology of the respiratory system.			
5.	Final learning outcomes (LO of the discipline)		
LO1	Demonstrates knowledge and understanding of the basics of semiotics and syndromology, etiology, pathogenesis and morphogenesis of respiratory system pathology.		
LO2	Proficient in methods of conducting questioning and physical examination of adults, uses clinical thinking in collecting information when drawing up an examination plan; outlines the scope of basic and additional studies to clarify the syndrome of damage in respiratory system pathology.		
LO3	Uses clinical thinking in collecting information when interpreting the results of morphological, laboratory and instrumental methods of examining patients with respiratory system pathology, formulates a syndromic diagnosis, and fills out a medical history.		
LO4	Communicates information, ideas, problems and solutions to patients and their family members, and is proficient in ethical and deontological practices when communicating with patients, their relatives and colleagues.		
LO5	Determines pathological processes at the organ and cellular levels, interprets data on the pathophysiology and morphology of diseases taking into account the clinical data of patients, makes conclusions, explains the patterns of development of complications and outcomes of respiratory system pathology, evaluates the results of experimental studies.		
LO6	Selects medications in accordance with the diagnosis, writes prescriptions, determines the dosage regimen, recognizes adverse effects of medications, predicts the development of side effects and interactions of medications used in respiratory pathology.		
LO7	Analyzes professional literature when working with scientific articles, completes a project, demonstrates a desire for continuous improvement of his/her activities.		
5.1	LO discipline	Learning outcomes of the EP, which are associated with the discipline LO	

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	LO 1	LO1. Applies fundamental knowledge of biomedical, clinical, epidemiological, and social-behavioral sciences to practice.													
	LO 2														
	LO 3	LO2. Provides patient-centered care in biomedical, clinical, epidemiological sciences aimed at diagnosis, treatment and prevention of the most common diseases.													
	LO 4														
	LO 5	LO6. Conducts outpatient appointments, diagnosis, treatment, follow-up and rehabilitation of pediatric and adult patients, including pregnant women, based on evidence-based practice principles.													
	LO 6	LO11. Analyzes the effectiveness of diagnosis and treatment results, applying the principles of personalized medicine.													
	LO7														
6.	Detailed information about the discipline														
6.1	- Location of the Department of Pathology and Forensic Medicine: Shymkent, Al-Farabi sq., 3, academic building No. 2 SKMA, 4th floor, rooms No. 404 a, b, No. 406, No. 408, No. 409, No. 411 a, b; e-mail: Patan.gisto@mail.ru - Location of the Department of Pharmacology, Pharmacotherapy and Pharmacology Clinic: Shymkent, Al-Farabi Ave., 1, main academic building of SKMA, 4th floor, auditorium #419, #421, #425, #429, #431, #434, #417, lecture hall #4; tel. 40-82-06 (ATS), 227 (ext.). - Location of the Department of Internal Medicine Propaedeutics: Shymkent, ParkHealth Clinic, Kurmanbekov St., 2; tel.: 8 701 738 6114, e-mail: propedevtica_vb@mail.ru														
6.2	Number of hours (150)	Lectures	Practical lessons		Lab.		SIWT		SIW						
		10	40				15		85						
6.3	Study plan for the discipline														
	Days	1	2	3	4	5	6	7	8	9	10	11	12	Hours	
	Form of the lesson														
Pharmacology (1 cr.)	Lecture	1								1				2	
	Practical	3			2					3				8	
	SIWT	1			1					1				3	
	SIW	6			2					6				14+3(IA)=17	
Propaedeutics of internal diseases (2 cr.)	Lecture		1			1		1			1			4	
	Practical		3			3		3	2		3		2	16	
	SIWT		1			1		1	1		1		1	6	
	SIW		6			6		6	3		6		1	28+6(IA)=34	
Pathological physiology (1 cr.)	Lecture			1					1					2	
	Practical			4					1			3		8	
	SIWT			1					1			1		3	
	SIW			6					3			5		14+3(IA)=17	
Pathological anatomy (1 cr.)	Lecture				1		1							2	
	Practical				2		4						2	8	
	SIWT				1		1						1	3	
	SIW				4		6						4	14+3(IA)=17	
7.	Information about teachers														
No.	Full name			Degrees and Position						Email address					
Department of Pathology and Forensic Medicine															
1	Sadykova Aliya Shamilevna			Head of the Department of Pathology and Forensic Medicine, Doctor of Medical Sciences, Acting Professor						aliya.sadykova.66@mail.ru					
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3	Dosybaev Bakhytzhn Krykbaevich			PhD, Acting Associate Professor						Krik85@mail.ru					
4	Khodjaev Nurlan Kenzhetoreevich			PhD, Acting Associate Professor						nkkhoja@mail.ru					
5	Kulbalieva Zhannat Zhakslikovna			PhD, Acting Associate Professor						zhann_7@mail.ru					

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6	Sedykh Egor Pavlovich	PhD, Acting Associate Professor	egorsedykh1986@yandex.com
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10	Berdaliev Gulmira Bakhytkyzy	Senior Lecturer	Mira-3505@mail.ru
11	Kurymbaeva Ainur Rashidkyzy	Assistant	Smp_zoj@mail.ru
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6	Muyutova Makhsuda Nasyrovna	Master of Medical Sciences, Senior Lecturer	mahsu_med@mail.ru

Department of Propaedeutics of Internal Diseases

1	Bekmurzaeva Elmira Kuanyshevna	Head of the Department, Doctor of Medical Sciences, Professor	Elmira-bek@mail.ru
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8. Thematic plan

Day	Form of the lesson	Topic Title	Summary	LO of module	Number of hours	Forms/ methods/ learning technologies	Forms/ evaluation methods
1	Pharmacology. Lecture 1	Medicines affecting respiratory function	Drugs used in bronchial conduction disorder syndrome alpha and beta adrenergic stimulants, M-anticholinergics, phosphodiesterase inhibitors, glucocorticosteroids, leukotriene receptor antagonists, mast cell stabilizers. Drugs used for pulmonary tissue consolidation syndrome: antibacterial therapy, antitussives and expectorants. Medicines used in fluid accumulation syndrome, lung	LO1	1	Overview lecture	Quick poll, feedback

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		agents. Agents affecting efferent innervation. Adrenergic agents. Cholinergic agents.	Mechanism of action. Application. Localization of alpha- and beta-adrenoreceptors. Characteristics of alpha- and beta-adrenoreceptors, their subtypes. Drugs that stimulate adrenergic synapses (adrenergic agonists, sympathomimetics). Drugs that block adrenergic synapses (adrenergic blockers, sympatholytics). M-N-cholinomimetic agents. Anticholinesterase agents. M-cholinomimetic agents. Toxic effects of muscarine, treatment of poisoning. N-cholinomimetic agents. M-anticholinergics. N-anticholinergics. Gangliblockers. Muscle relaxants. Classification, mechanism of action, pharmacological effects, indications for use, contraindications, side effects of drugs			of scientific articles on the topic and demonstration of results	analysis of a scientific article
2	Propedeutics of internal diseases. Lecture 1	Questioning, general examination of patients With diseases respiratory system. Palpation of the chest. Comparative and topographic percussion of the lungs. Diagnostic value.	Questioning, general examination of patients With diseases respiratory system. Palpation of the chest. Comparative and topographic percussion of the lungs. Diagnostic value.	LO2	1	Overview lecture	Blitz Poll Feedback
	Propedeutics of internal diseases. Practical lesson 1	Questioning, main and additional complaints, general examination of the chest at sick	Questioning, main and additional complaints, general examination of the chest at sick with respiratory diseases. Palpation and comparative and topographic percussion of the lungs at	LO2 LO3 LO4	3	Discussion of the topic of the lesson, implementation of practical skills	Practical Skills Mastery Checklist

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		with respiratory diseases. Palpation of the chest. Percussion of the lungs. at sick with diseases of the respiratory system in norm and pathology. Diagnostic meaning.	sick with diseases of the respiratory system in norm and pathology. Diagnostic meaning.				
	Propedeutics of internal diseases. SIWT/SIW 1	Palpation of the chest. Comparative and topographic percussion of the lungs. Diagnostic value.	Palpation of the chest. Comparative and topographic percussion of the lungs. Diagnostic value.	LO2 LO3 LO4	1/6	Presentation defense and practical skills implementation	Checklist for Presentation Defense and Acquisition of Practical Skills
3	Pathological physiology. Lecture 1	Impaired pulmonary ventilation and diffusion capacity of the lungs	Impaired ventilation of the lungs. Alveolar hypo- and hyperventilation, causes, consequences. Obstructive and restrictive types of hypoventilation, characteristics. Impaired diffusion of gases through the alveolar-capillary membrane. Clinical significance	LO1	1	Overview lecture	Quick poll Feedback
	Pathological physiology. Practical lesson 1	Impaired pulmonary ventilation and diffusion capacity of the lungs	Impaired ventilation of the lungs. Alveolar hypo- and hyperventilation, causes, consequences. Obstructive and restrictive types of hypoventilation, characteristics. Impaired diffusion of gases through the alveolar-capillary membrane. Clinical significance	LO3 LO5	4	Discussion of the topic, case solution	Topic Discussion Checklist, case solution checklist
	Pathological physiology. SIWT/SIW 1	Pleural pathology	Hydrothorax, hemothorax, pneumothorax, concept, causes, development mechanisms, consequences. Pleural adhesions, concept, etiology. Clinical significance	LO3 LO5	1/6	Case solution	Case Solution Checklist
4	Pharmacology. Practical lesson 2	Medicines affecting respiratory	Drugs used for bronchial conduction disorder syndrome: alpha- and beta -	LO6	2	Discussion of the topic, solving	Checklist for solving a situational

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	function.	adrenergic stimulants, M-anticholinergics, phosphodiesterase inhibitors, glucocorticosteroids, leukotriene receptor antagonists, mast cell stabilizers. Drugs used for pulmonary tissue consolidation syndrome: antibacterial therapy, antitussives and mucolytics. Medicines used for the syndrome of increased airiness in the lungs. Drugs used in fluid accumulation syndrome, cavity in the lung and respiratory failure. Drugs used in chronic obstructive pulmonary disease, chronic bronchitis, bronchiectasis. Classification, mechanism of action, pharmacological effects, indications for use, contraindications, side effects of drugs. Features of use in children.			situational problems, writing out prescriptions	problem, checklist for writing prescriptions
Pharmacology. SIWT/SIW 2	Irritants. Reflex action expectorants. Antiallergic agents.	Expectorants with reflex action. Bitters, laxatives and choleric agents with reflex action. Classification, mechanism of action, pharmacological effects, indications for use, contraindications, side effects of drugs. Antiallergic agents (H1-histamine receptor blockers, glucocorticosteroids, leukotriene receptor blockers, mast cell membrane stabilizers). Classification, mechanism of action, pharmacological effects, indications for use, contraindications, side effects of drugs. Features of use in children.	LO6 LO7	1/2	Analysis of the content of scientific articles on the topic and demonstration of results	Checklist conducting an analysis of a scientific article
Pathological anatomy.	Pathological anatomy of	Acute and chronic bronchitis. Lobar	LO1	1	Overview lecture	Quick poll Feedback

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	Lecture 1	respiratory diseases	pneumonia. Bronchopneumonia. Etiology. Pathogenesis. Morphogenesis. Pathological anatomy. Complications. Causes of death. Clinical significance				
	Pathological anatomy. Practical lesson 1	Pathological anatomy of respiratory diseases	Acute and chronic bronchitis. Lobar pneumonia. Bronchopneumonia. Lung abscess. Morphogenesis. Pathological anatomy. Complications. Causes of death. Clinical significance	LO3 LO5	2	Discussion of the topic, description of macro- and micro-paratov with the conclusion nim, case solution	Topic Discussion Checklist, Checklist descriptions of macro- and micropreparati ons, case solution checklist
	Pathological anatomy. SIWT/SIW 1	Pathological anatomy of respiratory diseases. PROJECT DISCUSSION	Interstitial (restrictive) lung diseases. Pneumosclerosis. Etiology. Pathogenesis. Morphogenesis. Pathological anatomy. Complications. Causes of death. Clinical significance. PROJECT on the topic: "Pathological anatomy of tuberculosis"	LO3 LO5 LO7	1/4	Discussion of the PROJECT topic case solution	Case solution checklist
5	Propedeutics of internal diseases. Lecture 2	Auscultation of the chest in patients with respiratory diseases in norm and pathology.	Auscultation of the chest in patients with respiratory diseases in norm and pathology.	LO2	1	Overview lecture	Blitz Poll Feedback
	Propedeutics of internal diseases. Practical lesson 2	Auscultation of the chest in patients with respiratory diseases in norm and pathology. Diagnostic value.	Auscultation of the chest in patients with respiratory diseases in norm and pathology. Vesicular, bronchial breathing. Pathological respiratory sounds: crepitation, pleural friction noise, wheezing. Diagnostic value.	LO2 LO3 LO4	3	Discussion of the topic of the lesson, implementation of practical skills	Practical Skills Mastery Checklist

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	Propedeutics of internal diseases. SIWT/SIW 2	Auscultation of the chest in patients with respiratory diseases in norm and pathology.	Auscultation of the chest in patients with respiratory diseases in norm and pathology.	LO2 LO3 LO4	1/6	Presentation defense and practical skills implementation	Checklist for Presentation Defense and Acquisition of Practical Skills
6	Pathological anatomy. Lecture 2	Pathological anatomy of respiratory diseases	Bronchial asthma. Emphysema. Bronchiectasis. Pulmonary edema. Hydrothorax. Pleurisy. Lung cancer.	LO1	1	Overview lecture	Quick poll Feedback
	Pathological anatomy. Practical lesson 2	Pathological anatomy of respiratory diseases	Bronchial asthma. Bronchiectasis. Emphysema. Pulmonary edema. Hydrothorax. Pleurisy. Lung cancer. Congenital malformations of the respiratory system. Etiology. Pathogenesis. Morphogenesis. Pathological anatomy. Complications. Causes of death. Clinical significance.	LO3 LO5	4	Discussion of the topic, description of macro- and micro-paratov with the conclusion nim, case solution	Topic Discussion Checklist, Checklist descriptions of macro- and micropreparati ons, case solution checklist
	Pathological anatomy. SIWT/SIW 2	Midterm exam #1 PROJECT IMPLEMENTATION (SIW)	Topics of lectures, practical classes, independent work, covered during 1 - 6 days of training	LO1 LO2 LO3 LO4 LO5 LO6	1/6	Integrated monitoring of educational achievements using control training cases, olving test tasks	Checklist case solutions, testing checklist
7	Propedeutics of internal diseases. Lecture 3	Leading clinical syndromes of the respiratory system: compaction of lung tissue, bronchial obstruction. Diagnostic value.	Leading clinical syndromes of the respiratory system: compaction of lung tissue, bronchial obstruction. Diagnostic value.	LO2	1	Overview lecture	Blitz Poll Feedback
	Propedeutics of internal diseases. Practical lesson 3	Leading clinical syndromes (pulmonary tissue compaction, bronchial obstruction, bronchial dysfunction) patency) of the respiratory system. Causes,	Leading clinical syndromes (pulmonary tissue compaction, bronchial dysfunction) patency) of the respiratory system. Causes,	LO2 LO3 LO4	3	Discussion of the topic of the lesson, implementation of practical skills	Practical Skills Mastery Checklist

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		bronchial dysfunction) patency) of the respiratory system.	risk factors, classification, clinical picture, diagnostics.				
	Propedeutics of internal diseases. SIWT/SIW 3	Laboratory and instrumental research methods for leading clinical syndromes of the respiratory system: compaction of lung tissue, bronchial obstruction. Diagnostic value.	Laboratory and instrumental research methods for leading clinical syndromes respiratory system: compaction of lung tissue, bronchial obstruction. Diagnostic value.	LO2 LO3 LO4	1/6	Presentation Defense	Presentation Protection Checklist
8	Propedeutics of internal diseases. Practical lesson 4	Leading clinical syndromes (increased airiness) respiratory systems. Diagnostic value.	Leading clinical syndromes (increased airiness) respiratory systems. Diagnostic value. Causes, risk factors, classification, clinical picture, diagnostics.	LO2 LO3 LO4	2	Discussion of the topic of the lesson, implementation of practical skills	Practical Skills Mastery Checklist
	Propedeutics of internal diseases. SIWT/SIW 4	Laboratory and instrumental research methods for leading clinical syndromes of the respiratory system: (increased airiness) Diagnostic value.	Laboratory and instrumental research methods for leading clinical syndromes respiratory system: (increased airiness) Diagnostic value.	LO2 LO3 LO4	1/3	Protection p p presentations	Presentation Protection Checklist
	Pathological physiology. Lecture 2	Impaired pulmonary perfusion and respiratory regulation	Pulmonary blood flow disorder. Pulmonary hypertension, forms, causes of development. Dysregulation of respiration, mechanisms, manifestations. Pulmonary edema, types, etiopathogenesis. Clinical significance	LO1	1	Overview lecture	Quick poll Feedback

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	Pathological physiology. Practical lesson 2	Impaired pulmonary perfusion and respiratory regulation	Pulmonary blood flow disorder. Pulmonary hypertension, forms, causes of development. Dysregulation of respiration, mechanisms, manifestations. Pulmonary edema, types, etiopathogenesis. Clinical significance	LO3 LO5	1	Work in small groups, discussion of the topic, case solution	Checklist for working in small groups, topic discussion checklist, case solution checklist
	Pathological physiology. SIWT/SIW 2	Pathological types of breathing	Periodic breathing, types, etiopathogenesis. Terminal types of breathing, etiopathogenesis. Dissociated breathing, concept. Clinical significance	LO3 LO5	1/3	Case solution	Case Solution Checklist
9	Pharmacology. Lecture 2	Drugs affecting the cardiovascular system.	Drugs used for arterial hypertension: diuretics, beta - blockers, alpha 1 - adrenergic blockers, direct vasodilators, calcium antagonists, ACE inhibitors, angiotensin receptor antagonists, central alpha-2 adrenergic agonists. Drugs used for ischemic heart disease: antianginal drugs, anticoagulants, antiplatelet agents, fibrinolytics, lipid-lowering drugs. Mechanism of action, indications, contraindications and side effects. Classification. Comparative characteristics of drugs and their use. Side effects. Features of use in children.	LO1	1	Overview lecture	Quick poll Feedback
	Pharmacology. Practical lesson 3	Drugs used for ischemic heart disease. Medicines used for arterial hypertension.	Drugs used for coronary heart disease: antianginal drugs, anticoagulants, antiplatelet agents, fibrinolytics, lipid-lowering drugs. Drugs used in acute and chronic heart failure: Cardiac glycosides, ACE inhibitors, diuretics, beta - blockers. Mechanism of action, indications, contraindications and side effects. Classification. Comparative characteristics of drugs and use. Side effects. Features of use in children. Drugs used for arterial	LO6	3	Discussion of the topic, solving situational problems, writing out prescriptions	Checklist for solving a situational problem, checklist for writing prescriptions

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			hypertension: diuretics, beta - blockers, alpha 1 blockers, direct vasodilators, calcium antagonists, ACE inhibitors, angiotensin receptor antagonists, central alpha-2 adrenergic agonists.				
	Pharmacology. SIWT/SIW 3	Drugs used in acute coronary syndrome. Drugs used in ventricular heart rhythm disorders. Prevention of sudden cardiac death.	Drugs used in acute coronary syndrome. Medicines used for heart rhythm disorders (antiarrhythmic drugs). Prevention of sudden cardiac death.	LO6 LO7	1/6	Analysis of the content of scientific articles on the topic and demonstration of results	Checklist conducting an analysis of a scientific article
10	Propedeutics of internal diseases. Lecture 4	Leading clinical syndromes of respiratory systems : increased airiness, presence of fluid and cavity in the lung. Acute and chronic respiratory failure. Diagnostic value.	Leading clinical syndromes of respiratory systems : increased airiness, presence of fluid and cavity in the lung. Acute and chronic respiratory failure. Diagnostic value.	LO2	1	Overview lecture	Blitz Poll Feedback
	Propedeutics of internal diseases. Practical lesson 5	Leading clinical syndromes (presence of fluid and cavity in the lung) respiratory systems. Diagnostic value.	Leading clinical syndromes (presence of fluid and cavity in the lung) respiratory systems. Diagnostic value. Causes, risk factors, classification, clinical picture, diagnostics.	LO2 LO3 LO4	3	Discussion of the topic of the lesson, implementation of practical skills	Practical Skills Mastery Checklist
	Propedeutics of internal diseases. SIWT/SIW 5	Laboratory and instrumental research methods for leading clinical syndromes of the respiratory	Laboratory and instrumental research methods for leading clinical syndromes respiratory system: (presence of fluid and cavity in the lung) Diagnostic value.	LO2 LO3 LO4	1/6	Presentation Defense	Presentation Protection Checklist

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		system: (the presence of fluid and cavity in the lung) Diagnostic value.					
11	Pathological physiology. Practical lesson 3	Insufficiency of external respiration	External respiratory failure, classification, etiopathogenesis, clinical manifestations. Mechanisms of hypoxemia development in respiratory failure. Clinical significance	LO3 LO5	3	Work in small groups, discussion of the topic, case solution	Checklist for working in small groups, topic discussion checklist, case solution checklist
	Pathological physiology. SIWT/SIW 3	Respiratory distress syndrome	Respiratory distress syndrome of newborns and respiratory distress syndrome of adults, concept, etiopathogenesis, manifestations. Clinical significance	LO3 LO5	1/5	Case solution	Case Solution Checklist
12	Propedeutics of internal diseases. Practical lesson 6	Leading clinical syndromes (acute and chronic respiratory failure) of the respiratory system. Diagnostic value.	Leading clinical syndromes (acute and chronic respiratory failure) of the respiratory system. Causes, risk factors, classification, clinical picture, diagnostics.	LO2 LO3 LO4	2	Discussion of the lesson topic, implementation of practical skills	Practical Skills Mastery Checklist
	Propedeutics of internal diseases. SIWT/SIW 6	Laboratory and instrumental research methods for leading clinical syndromes of the respiratory system: (acute and chronic respiratory failure) Diagnostic value.	Laboratory and instrumental research methods for leading clinical syndromes respiratory system: (acute and chronic respiratory failure) Diagnostic value.	LO2 LO3 LO4	1/1	Presentation Defense	Presentation Protection Checklist
	Pathological anatomy. Practical lesson 3	Pathological anatomy of respiratory diseases	Pulmonary tuberculosis. Etiology. Pathogenesis. Morphogenesis. Pathological anatomy. Complications. Causes of death. Clinical significance. Defense of the PROJECT	LO3 LO5 LO7	2	Discussion of the topic, description of macro-micropreparations, solution of cases.	Topic Discussion Checklist, Checklist descriptions of macro- and micropreparati

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			on the topic: "Pathological anatomy of tuberculosis"			Project Defense	ons, case solution checklist. Project Defense Checklist
	Pathological anatomy. SIWT/SIW 3	Midterm exam #2	Independent work, covered during 7-12 days of training	LO1 LO2 LO3 LO4 LO5 LO6	1/4	Integrated monitoring of educational achievements using control training cases, olving test tasks	Checklist case solutions, testing checklist
Preparation and implementation of interim assessment							15 hours
9.	Teaching methods and control forms						
9.1	Lectures	Overview lectures (quick survey)					
9.2	Practical classes	Work in small groups, discussion of the topic, oral questioning, writing out prescriptions, solving a case, describing macro- and micropreparations with a conclusion, performing practical skills, Interpretation of clinical laboratory test results. Project defense					
9.3	SIWT/SIW	Case study solution, scientific article analysis, Presentation defense and practical skills implementation, discussion of the topic. Project defense					
9.4	Midterm exam	Integrated monitoring of educational achievements using control educational cases, testing.					
10.	Evaluation criteria						
10.1	Criteria for assessing the learning outcomes of the discipline						
No. RO	Name of learning outcomes	Unsatisfactory	Satisfactory	Good		Excellent	
LO 1	Demonstrates knowledge and understanding of the basics of semiotics and syndromology, etiology, pathogenesis and morphogenesis of pathology of the genitourinary system	1. Does not have a knowledge of the basics of semiotics and syndromology, does not identify symptoms and syndromes. 2. Cannot explain the etiology, pathogenesis and morphogenesis of pathological changes in the genitourinary system	1. Does not have a basic understanding of semiotics and syndromology, makes gross errors in determining symptoms and syndromes in pathologies of the genitourinary system. 2. Makes mistakes when explaining the etiology, pathogenesis and morphogenesis of pathological changes in the genitourinary system	1. Has a basic understanding of semiotics and syndromology, and can identify symptoms and syndromes. 2. Explains the etiology, pathogenesis and morphogenesis of pathological changes in the genitourinary system, but allows for fundamental inaccuracies		1. Fluently masters the basics of semiotics and syndromology, independently identifies symptoms and syndromes. 2. Freely explains the etiology, pathogenesis and morphogenesis of pathological changes in the genitourinary system	
LO2	Has knowledge of methods of conducting questioning, physical examination of adults and children, uses clinical thinking in	Does not know the basic pathophysiological processes in the genitourinary system. Unable to explain the mechanisms	Makes mistakes when describing the main pathological changes in the genitourinary system. Able to explain the mechanisms with errors	Describes the basic genitourinary system. Able to fully explain the mechanisms		Demonstrates the basic genitourinary system. Able to sketch the mechanisms	

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	collecting information when drawing up an examination plan; outlines the scope of basic and additional studies to clarify the syndrome of damage in pathology of the genitourinary system				
RO 3	Uses clinical thinking in collecting information when interpreting the results of morphological, laboratory and instrumental methods of examining patients with pathology of the genitourinary system, formulates a syndromic diagnosis, fills out a medical history	Does not know the main metabolic pathways that affect the function of the genitourinary system. Doesn't understand biochemical processes	Does not fully understand the main metabolic pathways that affect the function of the genitourinary system. Poor understanding of biochemical processes	Explains the main metabolic pathways that affect the function of the genitourinary system. Has a good understanding and knowledge of biochemical processes	Possesses clinical thinking skills, applies knowledge in collecting information when interpreting the results of morphological, laboratory and instrumental methods of examining patients with pathology of the genitourinary system, formulates a syndromic diagnosis, fills out a medical history. Effectively solves situational problems
RO 4	Communicates information, ideas, problems and solutions to patients and their family members, and is proficient in ethical and deontological practices when interacting with patients, their relatives and colleagues	Does not know how to apply knowledge of the genitourinary system in a clinical context, has not acquired the skills to collect a clinical history and perform a physical examination of patients with diseases of the genitourinary system to provide first aid, does not able to interpret the results of laboratory and instrumental studies	Does not fully know how to apply knowledge about the genitourinary system in a clinical context, collects clinical anamnesis and physical examination of patients with diseases of the genitourinary system to provide first aid with errors, poorly oriented in interpreting the results of laboratory and instrumental studies	Lists information about the genitourinary system in a clinical context, collects clinical history and physical examination of patients with diseases of the genitourinary system with the provision of first aid, is well versed in interpreting the results of laboratory and instrumental studies	Freely demonstrates knowledge of the genitourinary system in a clinical context, collects clinical anamnesis and physical examination of patients with diseases of the genitourinary system with the provision of first aid, is well versed in interpreting the results of laboratory and instrumental studies
RO 5	Determines pathological processes at the organ and cellular levels, interprets data on the pathophysiology and morphology of diseases taking into account the clinical	1. Is unable to determine pathological processes at the organ and cellular levels, makes gross errors. 2. Cannot interpret data on the etiology, pathophysiology and morphology of diseases taking into	1. Determines pathological processes at the organ and cellular levels, but makes gross errors. 2. Cannot independently interpret data on the etiology, pathophysiology and morphology of	1. Determines pathological processes at the organ and cellular levels. 2. Interprets data on the etiology, pathophysiology and morphology of diseases, taking into	1. Independently determines pathological processes at the organ and cellular levels. 2. Independently interprets data on the etiology, pathophysiology and morphology of

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	data of patients, makes conclusions, explains the patterns of development of complications and outcomes of pathology of the genitourinary system, evaluates the results of experimental studies	account the clinical data of patients. 3. Makes erroneous conclusions, has poor orientation and does not explain the patterns of development of complications and outcomes of pathology of the genitourinary system. 4. Is unable to evaluate the results of experimental studies and makes fundamental mistakes. 5. Incapable of solving situational problems	diseases taking into account the clinical data of patients. 3. Makes erroneous conclusions, finds it difficult to independently explain the patterns of development of complications and outcomes of pathology of the genitourinary system. 4. Finds it difficult to evaluate the results of experimental studies and makes fundamental inaccuracies. 5. Solves situational problems, but makes fundamental mistakes	account the clinical data of patients. 3. Draws conclusions, explains the patterns of development of complications and outcomes of pathology of the genitourinary system. 4. Evaluates the results of experimental studies, but allows for minor inaccuracies. 5. Solves situational problems	diseases, taking into account the clinical data of patients. 3. Draws conclusions, explains the patterns of development of complications and outcomes of pathology of the genitourinary system. 4. Evaluates the results of experimental studies. 5. Effectively solves situational problems
LO 6	Selects medications in accordance with the diagnosis, writes prescriptions, determines the dosage regimen, recognizes adverse effects of medications, predicts the development of side effects and interactions of medications used in pathology of the genitourinary system	1. Defines the general pharmacological group of drugs. 2. writes out a prescription with errors	1. Selects a pharmacological group of drugs by organs and systems. 2. Writes out a prescription using reference literature/ sources	1. Selects medications for the treatment and prevention of the most common diseases. 2. Writes out a prescription for the specified medication without errors. 3. Calculates the dose of the drug	1. Selects medications from various pharmacological groups in accordance with indications for use, contraindications and side effects 2. Writes out a prescription for medications in the most appropriate dosage form depending on age, gender, and functional characteristics. 3. Calculates doses using various methods and determines the frequency and duration of use of the drug
LO7	Analyzes professional literature when working with scientific articles, carries out a project, demonstrates a desire for continuous improvement of his/her activities	1. Does not have research skills. 2. Does not have a desire for continuous self-education and development	1. Cannot analyze the topics of the classes. 2. Participates in the implementation of the project. 3. Violates deadlines for completing tasks	1. Analyzes scientific articles on the topics of the lesson. 2. Participates in the implementation of the project. 3. Completes assignments on time	1. Analyzes scientific articles on the topics of the lesson. 2. Uses international databases. at work 2. Successfully defends the completed project. 3. Demonstrates motivation for independent work, approaches tasks creatively

10.2 Methods and criteria for evaluation

Checklist for assessing the practical lesson in pharmacology

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Discussion of the topic	Unsatisfactory corresponds to points 0-24	- failed to demonstrate the skill of using literature and justifying the selected list of literature in this article; - made gross mistakes when answering - found it difficult to justify and argue the relevance of the problem; - could not explain the purpose of the work, the materials and methods used in the work; - was unable to convey the semantic content of a scientific article; - was unable to argue and justify the conclusions; - failed to demonstrate the skill of using literature and justifying the selected list of literature in this article; - made gross mistakes when answering
	Excellent corresponds to points 95-100 90-94	- did not make any mistakes during the discussion; - was oriented in the theories, concepts and directions of the discipline and gave them a critical assessment; - used scientific achievements of other disciplines
	Good corresponds to points 85-89 80-84 75-79 70-74	- during the discussion he did not make any gross mistakes, but he did make inaccuracies and minor errors, which he corrected himself; - managed to systematize the program material with the help of the teacher
	Satisfactory corresponds to points 65-69 60-64 50-54	- made fundamental mistakes during the discussion; - limited himself to only the educational literature specified by the teacher; - experienced great difficulty in systematizing the material
	Unsatisfactory corresponds to points 25-49	- made gross mistakes during the discussion; - did not study the basic literature on the topic of the lesson; - failed to use the scientific terminology of the discipline
	Unsatisfactory corresponds to points 0-24	

Checklist for midterm assessment

Testing - testing is assessed using a multi-point knowledge assessment system.

Checklist for assessing practical skills in propaedeutics of internal diseases

Form of control	Grade	Evaluation criteria
carrying out practical work	Excellent corresponds to points 95-100 90-94	The student is well-versed in questioning and examining patient. Correctly and accurately selects questions when collecting anamnesis, accurately analyzes primary and secondary complaints, and is well-versed in the collected anamnesis of life and disease. - Accurately performs a basic physical examination (general examination, palpation, percussion, auscultation, blood pressure measurement, determination of pulse characteristics, respiratory rate, etc.) in children and adolescents. - Conducts correct linking of objective physical examination data (palpation, auscultation, percussion), correctly interprets laboratory and instrumental examination data. - Ability to evaluate pathophysiological patterns of research results. Finds and compares the connection between the main symptoms and syndromes. - Substantiates and establishes a presumptive syndrome-based

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		diagnosis. - Used additional literature when preparing for the lesson. Systematizes the material on the given topic. - Effectively communicates in medical practice, objectively conveys relevant information, knows and uses the norms of ethics and deontology when performing the skill;
	Good corresponds to points 85-89 80-84 75-79 70-74	The student differentiates between primary and secondary complaints well, is well oriented in the collected anamnesis of life and disease. Is well oriented when questioning and examining patients, but allows minor inaccuracies or fundamental errors, corrected by the student himself. - Accurately performs a basic physical examination: general examination, palpation, percussion, auscultation, blood pressure measurement, determination of pulse characteristics, respiratory rate, etc. of children and adolescents. Incapable of correctly interpreting examination results. Does not accurately convey appropriate information; - Links data from objective physical examination (palpation, auscultation, percussion), and incorrectly interprets data from laboratory and instrumental studies. - Has errors in assessing pathophysiological patterns based on research results. Finds and compares the relationship between the main symptoms and syndromes. Establishes a presumptive syndrome-based diagnosis without substantiating the data
	Satisfactory corresponds to points 65-69 60-64 50-54	- The student is able to navigate when questioning and examining patients, <u>differentiates between</u> primary and secondary complaints with errors, and is poorly <u>oriented</u> in the collected anamnesis of life and illness. - Makes mistakes when conducting a physical examination (palpation, percussion, auscultation and general examination) and demonstrates incomplete knowledge of the material on a given topic, while making fundamental mistakes. - <u>Links</u> data from objective physical examination (palpation, auscultation, percussion), correctly <u>interprets</u> data from laboratory and instrumental studies. Has errors in assessing examination results. - Is unable to <u>evaluate</u> pathophysiological patterns of research results. <u>Is unable to determine</u> the relationships between the main symptoms and syndromes. <u>Establishes</u> a presumptive syndrome-based diagnosis without substantiating the data. - Has a low level of communication skills in medical practice; <u>subjectively conveys appropriate information</u>;
	Unsatisfactory corresponds to points 25-49	- The student has no idea about the main and secondary complaints, and is not <u>oriented</u> in the collected anamnesis of life and illness. - Is unable to carry out practical skills to interpret their results. <u>Cannot determine the relationship of</u> objective physical examination data (palpation, auscultation, percussion), incorrectly <u>interprets</u> laboratory and instrumental examination data.
	Unsatisfactory corresponds to points 0-24	- Does not know how to <u>evaluate</u> pathophysiological patterns of research results. <u>Does not find and is not able to compare</u> the relationship between the main symptoms and syndromes. Establishes a presumptive syndrome-based diagnosis without substantiating the data - Does not participate in the work of the group. Is not able to

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		communicate in medical practice; does not convey proper information, does not know and is not able to use the norms of ethics and deontology when performing the skill. When answering the teacher's questions, gross errors, not using specific terminology in answers.
Case solution	Excellent corresponds to points 95-100 90-94	- solved cases within a certain time; - gave full answers to all questions Demonstrates original thinking when analyzing a situational task. Fully utilizes theoretical knowledge necessary to solve a given task. Demonstrates excellent knowledge of reference biochemical parameters when interpreting the proposed biofluid analysis data. Demonstrates the ability to draw logical conclusions on a situational task, while demonstrating a deep understanding of the necessary educational material.
	Good corresponds to points 85-89 80-84 75-79 70-74	- solved cases within a certain time; - gave complete answers to all questions; - made minor mistakes when solving cases Possesses the necessary knowledge to solve this situational task. Allows for minor inaccuracies when discussing this case. Is able to draw correct conclusions on the proposed situational task.
	Satisfactory corresponds to points 65-69 60-64 50-54	- solved cases within a certain time; - gave incomplete answers to questions; - made fundamental mistakes when solving cases Allows minor inaccuracies when discussing a given task, has difficulty interpreting analyses proposed in a situational task. Draws conclusions with difficulty
	Unsatisfactory corresponds to points 25-49	- solved cases incorrectly or did not solve them at all; - made gross mistakes when solving cases Allows fundamental errors in discussing a situational task. Passive, unable to draw appropriate conclusions.
	Unsatisfactory corresponds to points 0-24	
Interpretation of clinical laboratory test results	Excellent corresponds to points 95-100 90-94	- correctly, without any errors, interpreted the results of clinical laboratory tests; - made a reasoned conclusion
	Good corresponds to points 85-89 80-84 75-79 70-74	- correctly interpreted the results of clinical laboratory tests, making minor errors; - made a reasoned conclusion
	Satisfactory corresponds to points 65-69 60-64 50-54	- correctly interpreted the results of clinical laboratory studies, having made fundamental mistakes; - made an unfounded conclusion
	Unsatisfactory corresponds to points 25-49	- incorrectly interpreted the results of clinical laboratory tests, making gross errors; - did not draw a conclusion
	Unsatisfactory corresponds to points 0-24	

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Discussion of the topic	Excellent corresponds to points 95-100 90-94	- did not make any mistakes during the discussion; - was oriented in the theories, concepts and directions of the discipline and gave them a critical assessment; - used scientific achievements of other disciplines
	Good corresponds to points 85-89 80-84 75-79 70-74	- during the discussion he did not make any gross mistakes, but he did make inaccuracies and minor errors, which he corrected himself; - managed to systematize the program material with the help of the teacher
	Satisfactory corresponds to points 65-69 60-64 50-54	- made fundamental mistakes during the discussion; - limited himself to only the educational literature specified by the teacher; - experienced great difficulty in systematizing the material
	Unsatisfactory corresponds to points 25-49	- made gross mistakes during the discussion; - did not study the basic literature on the topic of the lesson; - failed to use the scientific terminology of the discipline
	Unsatisfactory corresponds to points 0-24	

Checklist for assessing the analysis of scientific articles

Score in points by %	Unsatisfactory (0-49%)	Satisfactory (50-69%)	Good (70-89%)	Excellent (90-100%)
Evaluation criteria				
Structure of the article	1. Does not name the structural components of a scientific article	1. Does not follow the order of the structure of the scientific article when listing, skips components	1. Lists the structural components of a scientific article, but violates the order of the structure	1. Observes the order of the structure of a scientific article when listing: - Name - Authors - Publishing house - Summary - General part (introduction, purpose, materials and methods, results and discussion) - Conclusions - Bibliography

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Analysis of the content of a scientific article	1. Does not understand the relevance of the problem, is not capable of discussing the content of the article	1. Understands the relevance of the problem 2. Lists the purpose of the work, the materials and methods used in the work 3. Understands the content of a scientific article 4. Lists the conclusions and bibliography in this article	1. Assumes the relevance of the problem 2. Explains the purpose of the work, the materials used in the work and methods presents the content of a scientific article 3. Justifies the conclusions 4. Justifies the selected list of references in this article	1. Independently substantiates and argues the relevance of the problem 2. Explains the purpose of the work, the materials and methods used in the work 3. Freely expresses the semantic content of a scientific article 4. Argues and justifies conclusions 5. Has the skill of using literature and justifies the selected list of literature in this article
Answer to additional questions (on the topic of the article for the discipline)	1. Does not answer additional questions on the topic	1. Does not understand the problem at hand when answering additional questions	1. Apply the knowledge gained during the practical lesson on the topic when answering additional questions	1. Applies the knowledge gained during the practical lesson on the topic when answering additional questions, provides a deep and comprehensive argumentation

Checklists for the discipline of pathological physiology

Checklist for training cases		
	Excellent corresponds to points 95-100 90-94	- solved cases within a certain time; - gave full answers to all questions Demonstrates original thinking when analyzing a situational task. Fully utilizes theoretical knowledge necessary to solve a given task. Demonstrates excellent knowledge of reference biochemical parameters when interpreting the proposed biofluid analysis data. Demonstrates the ability to draw logical conclusions on a situational task, while demonstrating a deep understanding of the necessary educational material.
	Good corresponds to points 85-89 80-84 75-79 70-74	- solved cases within a certain time; - gave complete answers to all questions; - made minor mistakes when solving cases Possesses the necessary knowledge to solve this situational task. Allows for minor inaccuracies when discussing this case. Is able to draw correct conclusions on the proposed situational task.
	Satisfactory corresponds to points 65-69 60-64 50-54	- solved cases within a certain time; - gave incomplete answers to questions; - made fundamental mistakes when solving cases Allows minor inaccuracies when discussing a given task, has difficulty interpreting analyses proposed in a situational task. Draws conclusions with difficulty

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Interpretation of clinical laboratory test results	Unsatisfactory corresponds to points 25-49	- solved cases incorrectly or did not solve them at all; - made gross mistakes when solving cases Allows fundamental errors in discussing a situational task. Passive, unable to draw appropriate conclusions.
	Unsatisfactory corresponds to points 0-24	
	Excellent corresponds to points 95-100 90-94	- correctly, without any errors, interpreted the results of clinical laboratory tests; - made a reasoned conclusion
	Good corresponds to points 85-89 80-84 75-79 70-74	- correctly interpreted the results of clinical laboratory tests, making minor errors; - made a reasoned conclusion
	Satisfactory corresponds to points 65-69 60-64 50-54	- correctly interpreted the results of clinical laboratory studies, having made fundamental mistakes; - made an unfounded conclusion
	Unsatisfactory corresponds to points 25-49	- incorrectly interpreted the results of clinical laboratory tests, making gross errors; - did not draw a conclusion
	Unsatisfactory corresponds to points 0-24	

Checklist for the defense of the completed project on pathological anatomy

Checklist for assessing project work			
Interim assessment of project work			Max 100
No.	Criterion	Description	Points
1	Definition of the problem situation and relevance of the research	The problems are clearly formulated, scientifically substantiated and integrated. The relevance of the research topic is substantiated	15-20
		The problems are formulated and substantiated. The relevance of the research topic is substantiated.	10-14
		The problems are partially formulated, not substantiated. The relevance of the research topic is partially argued.	5-9
		The problems are not formulated or formulated superficially. The relevance of the topic is not reflected.	0-4
2	Setting the project goal and defining the tasks to achieve it	The objective is formulated clearly and briefly. The research objectives fully correspond to the objective.	15-20
		The goal is formulated, but described in too much detail. The research objectives correspond to the goal.	10-14

		The objective is formulated vaguely. The research objectives partially correspond to the objective.	5-9
		The objective is formulated vaguely or not formulated. The research objectives do not correspond to the objective.	0-4
3	Selection and use of literature	The most relevant publications/research studies posted in full-text databases in authoritative publications are indicated. References are given in the text sequentially with numbers.	15-20
		Publications/studies posted in full-text databases from a limited number of sources are indicated. References in the text are given sequentially with numbers.	10-14
		The publications/researches of the same type, placed in open access on the Internet, are indicated. Full-text databases and authoritative publications are practically not used. Most of the sources are not related to the topic of the project. References in the text are not indicated.	5-9
		Full-text databases and authoritative publications are practically not used. Most sources are not related to the topic of the project. References are not given in the text.	0-4
4	Timely submission of interim results	Systematic publication of project work results on the Trello board. Interim project results are presented on time.	15-20
		Periodic publication of project work results on the Trello board. Interim project results are presented on time.	10-14
		Periodic publication of project work results on the Trello board. Interim project results are not presented on time	5-9
		Project work results were not published on the Trello board. Interim project results were not presented on time.	0-4
5	Personal involvement, creative approach to work	According to the interim results, there is a collective creative approach to solving problems, an even distribution of functions and coordinated work.	15-20
		According to the interim results, there is an even distribution of functions in the team, well-coordinated work	10-14
		According to the interim results, there is an uneven distribution of functions in the team, coordinated work	5-9
		According to the intermediate results, there is a formal attitude of the participants to the work	0-4

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		being performed, there is no collective interaction	
Final assessment of the project work			Max 100
1	Depth of disclosure of the project topic	The topic of the project is fully disclosed, and deep knowledge beyond the program being studied is demonstrated during the defense. Research methods are described, and ways to achieve goals are substantiated. Scientific terms are used, and free handling of them is observed. Modern research methods are used.	15-20
		The topic of the project is disclosed, and residual knowledge within the framework of the program being studied is demonstrated during the defense. Research methods are described, and ways of achieving the goals are substantiated. Scientific terms are not used enough. The text is presented in a logical sequence.	10-14
		The topic of the project is partially disclosed. The description of the project is not complete. Scientific terms are not used. The text is presented chaotically.	5-9
		The topic of the project is not disclosed. The description of the project is incomplete. Scientific terms are not used. The text is presented chaotically.	0-4
2	Objectivity and reliability of the obtained results, their practical significance	The results fully reflect the research, are objective and reliable. Tables, figures and formulas are provided. The applicability of the research results and the target consumers of the results are indicated.	15-20
		The results fully reflect the research, are objective and reliable. Tables, figures and formulas are provided. The applicability of the research results and the target consumers of the results are not indicated.	10-14
		The results partially reflect the research, are objective and reliable. There are insufficient tables, figures and formulas.	5-9
		The results do not reflect the research, are not objective, are not reliable. Tables, figures, formulas are not provided or are provided insufficiently.	0-4
3	Formulating conclusions	The conclusions are formulated correctly, reasoned and fully reflect the results of the research.	15-20
		The conclusions are formulated correctly and substantiated, but partially reflect the results of the research.	10-14

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4	Achieving the project goal and solving the assigned tasks	The conclusions are not fully formulated, are not sufficiently substantiated and partially reflect the results of the research.	5-9
		The conclusions are formulated incorrectly, are not substantiated, and partially reflect or do not reflect the results of the research.	0-4
		The project goal has been achieved. All set tasks have been fully resolved.	15-20
		The project goal has been achieved overall. The tasks set have not been fully completed.	10-14
5	Compliance of the project design with the requirements and project protection	The project goal has been partially achieved. Not all tasks have been completed.	5-9
		The project goal has not been achieved. The tasks set have been partially or not solved.	0-4
		The project reflects and discloses all sections. The text is presented in a logical sequence, concisely, competently. Technical requirements for the design of the project are met. The presentation is visual. During the defense, the speaker demonstrates professional awareness and artistry.	15-20
		The project reflects and discloses all sections. The text is presented in a logical sequence. There are minor grammatical and stylistic errors. The technical requirements for the design of the project are not fully met. The presentation is not very clear. During the defense, the speaker demonstrates professional awareness and artistry.	10-14
		The project reflects all sections. The logical sequence of presentation of the material is not always observed. There are grammatical and stylistic errors. Technical requirements for the design of the project are not met. The presentation is not very clear. During the defense, the speaker does not demonstrate deep knowledge of the topic, is constrained.	5-9
		The project does not reflect all sections. The logical sequence of presentation of the material is not observed. There are grammatical and stylistic errors. Technical requirements for the design of the project are not met. The presentation is not very clear. During the defense, the speaker does not demonstrate deep knowledge of the topic, has difficulty answering questions, and is constrained.	0-4

Checklists for the discipline pathological anatomy

Checklists for the discipline pathological anatomy

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	Satisfactorily corresponds to points 65-69	- solved cases within a certain time; - gave incomplete answers to questions; - made fundamental mistakes when solving cases	
	60-64	- solved cases within a certain time; - gave incomplete answers to questions; - made fundamental mistakes when solving cases Allows for minor inaccuracies when discussing a given task, has difficulty interpreting the analyses proposed in a situational task	
	50-54	- solved cases within a certain time; - gave incomplete answers to questions; - made fundamental mistakes when solving cases Allows minor inaccuracies when discussing a given task, has difficulty interpreting analyses proposed in a situational task. Draws conclusions with difficulty	
	Unsatisfactory corresponds to points 25-49	- solved cases incorrectly or did not solve them at all; - made gross mistakes when solving cases	
	Unsatisfactory corresponds to points 0-24	- solved cases incorrectly or did not solve them at all; - made gross mistakes when solving cases Allows fundamental errors in discussing a situational task. Passive, unable to draw appropriate conclusions.	
Description of the macropreparation	"Excellent" corresponds to points 95-100	-correctly named the organ, indicated the dimensions, - described the surface: the condition of the capsule or serous membrane, dullness, shine, overlap; - gave a description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; -made the correct pathological conclusion/diagnosis	

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	90-94	-correctly named the organ, indicated the dimensions, - described the surface: the condition of the capsule or serous membrane, dullness, shine, overlap; - gave a description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; - -made a minor mistake -made the correct pathological conclusion/diagnosis	
	"Good" corresponds to points 85-89	- correctly named the organ, indicated the dimensions, described the surface: condition of the capsule or serous membrane, dullness, shine, overlap; - gave a description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; - made the correct pathological conclusion/diagnosis, but during the answer made 1 non-fundamental mistakes and inaccuracies	
	80-84	correctly named the organ, indicated the dimensions, described the surface: condition of the capsule or serous membrane, dullness, shine, overlap; - gave a description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; -made the correct pathological conclusion/diagnosis, but during the answer made 2 non-fundamental mistakes and inaccuracies	
	75-79	correctly named the organ, indicated the dimensions, described the surface: condition of the capsule or serous membrane, dullness, shine, overlap;	

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		- gave a description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; -made the correct pathological conclusion/diagnosis, but during the answer made 3 non-fundamental mistakes and inaccuracies	
	70-74	correctly named the organ, indicated the dimensions, described the surface: condition of the capsule or serous membrane, dullness, shine, overlap; - gave a description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; -made the correct pathological conclusion/diagnosis, but during the answer made 4 non-fundamental mistakes and inaccuracies	
	"Satisfactorily" corresponds to points 65-69	- correctly named the organ, did not indicate the dimensions, did not fully describe the surface: did not describe the condition of the capsule or serous membrane, dullness, shine, overlap; - gave an incomplete description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; -made the correct pathological conclusion/diagnosis, but during the answer made 1- fundamental errors and inaccuracies	
	60-64	- correctly named the organ, did not indicate the dimensions, did not fully describe the surface: did not describe the condition of the capsule or serous membrane, dullness, shine, overlap; - gave an incomplete description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; -made the correct pathological	

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		conclusion/diagnosis, but during the answer made 2- fundamental errors and inaccuracies	
	50-54	correctly named the organ, did not indicate the dimensions, did not fully describe the surface: did not describe the condition of the capsule or serous membrane, dullness, shine, overlap; - gave an incomplete description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; -made the correct pathological conclusion/diagnosis, but during the answer made 3- fundamental errors and inaccuracies	
	"Unsatisfactory" corresponds to points 25-49	- correctly named the organ, did not indicate the size, did not describe the surface: did not describe the condition of the capsule or serous membrane, dullness, shine, overlap; - gave an incorrect description of the pathological focus: did not indicate the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; - made the correct pathological conclusion/ diagnosis, but during the answer made fundamental mistakes and inaccuracies	
	"Unsatisfactory" corresponds to points 0-24	- incorrectly named the organ, did not indicate the size, did not describe the surface: did not describe the condition of the capsule or serous membrane, dullness, shine, overlap; - gave an incorrect description of the pathological focus: did not indicate the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency; - made an incorrect pathological conclusion/diagnosis, made gross errors during the answer, left some questions unanswered	

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Description of the microslide	"Excellent" corresponds to points 95-100	-correctly named the organ or tissue, correctly characterized pathological changes: localization, made a description, named the color; -made the correct pathological conclusion/diagnosis	
	90-94	correctly named the organ or tissue, correctly characterized pathological changes: localization, made a description, named the color; -made the correct pathological conclusion/diagnosis -made a minor mistake	
	"Good" corresponds to points 85-89	-correctly named the organ or tissue, correctly characterized pathological changes: localization, made a description, named the color; -made the correct pathological conclusion/diagnosis, but during the answer made 1- non-fundamental errors and inaccuracies	
	80-84	-correctly named the organ or tissue, correctly characterized pathological changes: localization, made a description, named the color; -made the correct pathological conclusion/diagnosis, but during the answer made 2- non-fundamental errors and inaccuracies	
	75-79	-correctly named the organ or tissue, correctly characterized pathological changes: localization, made a description, named the color; -made the correct pathological conclusion/diagnosis, but during the answer made 3- non-fundamental errors and inaccuracies	
	70-74	-correctly named the organ or tissue, correctly characterized pathological changes: localization, made a description, named the color; -made the correct pathological conclusion/diagnosis, but during the answer made 4- non-fundamental errors and inaccuracies	

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	"Satisfactorily" corresponds to points 65-69	- correctly named an organ or tissue, incorrectly characterized pathological changes: localization, made a description, incorrectly named the color; -made the correct pathological conclusion/diagnosis, but during the answer made 1- fundamental errors and inaccuracies	
	60-64	- correctly named an organ or tissue, incorrectly characterized pathological changes: localization, made a description, incorrectly named the color; -made the correct pathological conclusion/diagnosis, but during the answer made 2- fundamental errors and inaccuracies	
	50-54	- correctly named an organ or tissue, incorrectly characterized pathological changes: localization, made a description, incorrectly named the color; -made the correct pathological conclusion/diagnosis, but during the answer made 3- fundamental errors and inaccuracies	
	"Unsatisfactory" corresponds to points 25-49	- correctly named an organ or tissue, incorrectly characterized pathological changes: localization, made a description, incorrectly named the color; -made the correct pathological conclusion/diagnosis, made gross errors during the answer	
	"Unsatisfactory" corresponds to points 0-24	- incorrectly named an organ or tissue, incorrectly characterized pathological changes: localization, made a description, incorrectly named the color; - made an incorrect pathological conclusion/diagnosis, made gross mistakes during the answer, left some questions unanswered	
Discussion of the topic	Excellent corresponds to points 95-100	- did not make any mistakes during the discussion; - was oriented in the theories, concepts and directions of the discipline and gave them a critical assessment; - used scientific achievements of other disciplines	

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	90-94	- did not make any mistakes during the discussion; - was oriented in the theories, concepts and directions of the discipline and gave them a critical assessment; - used scientific achievements of other disciplines -made a minor mistake	
	Good corresponds to points 85-89	- during the discussion he did not make any serious mistakes, but he made 1-inaccuracies and minor errors, which he corrected himself; - managed to systematize the program material with the help of the teacher	
	80-84	- during the discussion he did not make any serious mistakes, but he made 2-inaccuracies and minor errors, which he corrected himself; - managed to systematize the program material with the help of the teacher	
	75-79	- during the discussion he did not make any serious mistakes, but he made 3-inaccuracies and minor errors, which he corrected himself; - managed to systematize the program material with the help of the teacher	
	70-74	- during the discussion he did not make any serious mistakes, but he made 4-inaccuracies and minor errors, which he corrected himself; - managed to systematize the program material with the help of the teacher	
	Satisfactorily corresponds to points 65-69	- during the discussion, he made 1 fundamental mistakes; - limited himself to only the educational literature specified by the teacher; - experienced great difficulty in systematizing the material	
	60-64	- during the discussion, he made 2 fundamental mistakes; - limited himself to only the educational literature specified by the teacher; - experienced great difficulty in systematizing the material	

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	50-54	- during the discussion, he made 3 fundamental mistakes; - limited himself to only the educational literature specified by the teacher; - experienced great difficulty in systematizing the material	
	Unsatisfactory corresponds to points 25-49	- made gross mistakes during the discussion; - did not study the basic literature on the topic of the lesson; - failed to use the scientific terminology of the discipline	
	Unsatisfactory corresponds to points 0-24	- found it difficult to answer; - did not study the basic literature on the topic of the lesson; - failed to use the scientific terminology of the discipline	

Checklist for SIWT/SIW

Analysis of a scientific article	Excellent corresponds to points 95-100 90-94	- independently substantiated and argued the relevance of the problem; - explained the purpose of the work, the materials and methods used in the work; - freely presented the semantic content of the scientific article; - argued and substantiated conclusions; - had the skill of using literature and justifying the selected list of references in this article	
	Good corresponds to points 85-89 80-84 75-79 70-74	- substantiated and argued the relevance of the problem; - explained the purpose of the work, the materials and methods used in the work; - outlined the semantic content of the scientific article; - argued and substantiated conclusions; - had the skill of using literature and justifying the selected list of references in this article; - when answering, he made minor mistakes and inaccuracies	
	Satisfactorily corresponds to points 65-69 60-64 50-54	- found it difficult to justify and argue the relevance of the problem; - explained the purpose of the work, the materials and methods used in the work; - had difficulty expressing the semantic content of a scientific article; - had difficulty arguing and substantiating conclusions; - had the skill of using literature and justifying the selected list of references in this article; - when answering, he made fundamental mistakes and inaccuracies	
	Unsatisfactory corresponds to points 25-49	- found it difficult to justify and argue the relevance of the problem; - explained the purpose of the work, the materials and methods used in the work; - had difficulty expressing the semantic content of a scientific article;	

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Discussion of the topic		- had difficulty arguing and substantiating conclusions; - failed to demonstrate the skill of using literature and justifying the selected list of literature in this article; - made gross mistakes when answering	
	Unsatisfactory corresponds to points 0-24	- found it difficult to justify and argue the relevance of the problem; - could not explain the purpose of the work, the materials and methods used in the work; - was unable to convey the semantic content of a scientific article; - was unable to argue and justify the conclusions; - failed to demonstrate the skill of using literature and justifying the selected list of literature in this article; - made gross mistakes when answering	
	Excellent corresponds to points 95-100 90-94	- did not make any mistakes during the discussion; - was oriented in the theories, concepts and directions of the discipline and gave them a critical assessment; - used scientific achievements of other disciplines	
	Good corresponds to points 85-89 80-84 75-79 70-74	- during the discussion he did not make any gross mistakes, but he did make inaccuracies and minor errors, which he corrected himself; - managed to systematize the program material with the help of the teacher	
	Satisfactorily corresponds to points 65-69 60-64 50-54	- made fundamental mistakes during the discussion; - limited himself to only the educational literature specified by the teacher; - experienced great difficulty in systematizing the material	
	Unsatisfactory corresponds to points 25-49 Unsatisfactory corresponds to points 0-24	- made gross mistakes during the discussion; - did not study the basic literature on the topic of the lesson; - failed to use the scientific terminology of the discipline	

Checklist of SIWT and SIW for the discipline of pathological anatomy

Checklist for assessing responses to the description of a macroscopic preparation in a case

N o.	Evaluation Criteria/Evaluation	Excellent	Good	Satisfactorily	Unsatisfactory
1	Name of the organ	5.0-4.0	3.9-3.0	2.9-2.0	1.9-0
2	Organ size	5.0-4.0	3.9-3.0	2.9-2.0	1.9-0
3	Surface: condition of the capsule or serous membrane, dullness, shine, superposition	10.0-9.0	8.9-7.0	6.9-5.0	4.9-0

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4	Characteristics of the pathological focus: Localization, size, shape (if an ulcer – condition of the bottom), color, consistency	20.0-19.0	18.9-15.0	14.9-11.0	10.9-0
5	Pathological diagnosis/conclusion	10.0-9.0	8.9-7.0	6.9-5.0	4.9-0
6	Total	50.0-45.0	44.5-35.0	34.5-25.0	24.5-0

Checklist for assessing responses to the description of a microscopic specimen in a case study

N o.	Evaluation Criteria/Evaluation	Excellent	Good	Satisfactorily	Unsatisfactory
1	Name of an organ or tissue	10.0-9.0	8.9-7.0	6.9-5.0	4.9-0
2	Characteristics of pathological changes: localization, description	25.0-23.0	22.9-20.0	19.9-15.0	14.9-0
3	Coloring	5.0-4.0	3.9-3.0	2.9-2.0	1.9-0
4	Pathological diagnosis/conclusion	10.0-9.0	8.8-5.0	4.8-3.0	2.8-0
5	Total	50.0-45.0	44.5-35.0	34.5-25	24.5-0

Checklist for midterm assessment

Testing - testing is assessed using a multi-point knowledge assessment system.

Multi-point knowledge assessment system

Letter Grading	Digital equivalent of points	Percentage content	Traditional system assessment
A	4.0	95-100	Excellent
A -	3.67	90-94	
B +	3.33	85-89	
B	3.0	80-84	Good
B -	2.67	75-79	
C +	2.33	70-74	
C	2.0	65-69	Satisfactory
C -	1.67	60-64	
D+	1.33	55-59	
D-	1.0	50-54	Unsatisfactory
FX	0.5	25-49	
F	0	0-24	

11. Learning Resources

Electronic • Электронная библиотека ЮКМА - <https://e-lib.skma.edu.kz/genres>

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Resources	- Республиканская межвузовская электронная библиотека (РМЭБ) – http://rmebrk.kz/ - Цифровая библиотека «Aknurpress» - https://www.aknurpress.kz/ - Электронная библиотека «Эпиграф» - http://www.elib.kz/ - Эпиграф - портал мультимедийных учебников https://mbook.kz/ru/index/ - ЭБС IPR SMART https://www.iprbookshop.ru/auth - информационно-правовая система «Зан» - https://zan.kz/ru - Medline Ultimate EBSCO - eBook Medical Collection EBSCO - Scopus - https://www.scopus.com/
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Department of Pathology and Forensic Medicine Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology Department of Propaedeutics of Internal Diseases		11-2025 Page 42of 48
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