OŃTÚSTIK-QAZAQSTAN	Laps	SOUTH KAZAKHSTAN	
MEDISINA	(SKMA)	MEDICAL	
AKADEMIASY	( shi )	ACADEMY	
«Оңтүстік Қазақстан медицина академиясы» АҚ		АО «Южно-Казахстанская медиці	инская академия»
Department «Microbiology, Virology and	d Immuno	ogy»	044-50/11-12
Work program of the discipline (	Syllabus)		1p. out of 24

# Department of «Microbiology, virology and immunology»

# Working curriculum of the discipline (Syllabus) «Microbiology and Immunology»

# Educational program 6B10115 «Medicine»

1.	General information about the discipline		
1.1	Discipline code: MI 2219	1.6	Academic year: 2023-2024
1.2	Name of discipline: Microbiology and	1.7	Course:2
	immunology		
1.3	Prerequisites: Molecular biology and medical	1.8	Semester: 4
	genetics, chemistry, basic morphology and		
	physiology		
1.4	Post-requests: Infectious diseases and infection	1.9	Number of credits (ECTS): 5
	control		
1.5	Cycle: <b>BD</b>	1.10	Component: UC
2.	Description of the discipline (maximum 50 words)		
The dis	scipline in microbiology and immunology reflects the	moderr	achievements of these sciences, which
are ma	indatory and important in the system of biomedica	al scien	ces, providing fundamental theoretical
knowle	dge, on thebasis of which all the training of a future do	ctor of a	any specialty is built.
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 intake ∞	3.8	Other (specify)
4.	Aims of the discipline		
Private	microbiology studies pathogenic microorganisms for	humans	: bacteria, viruses, fungi, protozoa, their
morpho	ology and physiology; the role of microorganisms i	in the e	tiology and pathogenesis of infectious
disease	s; the main clinical manifestations and the prevaler	nce of t	he diseases caused; specific diagnosis,
prevent	tion and treatment of infectious diseases. The student,	analyzi	ng the results of diagnostic methods for
antibio	gram, argues his own recommendations for the use of a	intibiotio	cs and immunobiological preparations.
5.	Learning outcomes (RO disciplines)		
LO1.	Knows the factors and types of immunity, its	signific	ance for a person, the principles of
	immunoprophylaxis and immunotherapy of human	disease	s, the mechanisms of the formation of
	allergic reactions, the types of immunological reaction	ns and the	neir application in medical practice;
LO2.	Knows taxonomy, morphological and biological p	propertie	s of pathogens of infectious diseases,
	epidemiology, mechanisms and ways of transmiss	sion of	pathogens, pathogenesis, main clinical
	manifestations of the disease, immunity, principles of	of labora	atory diagnostics, specific treatment and
1.02	prevention;	1.	
LO3.	Interprets the results of bacteriological, virological an	d immu	nological research methods;
LO4.	Analyzing the results of bacteriological, virologica	al and 1	mmunological diagnostic methods and
	antibiogram, he argues his own recommendations of	on the u	se of antibiotics and immunobiological
1.05	preparations; Despaces the skills of taking biometarial and conding	the test	matarial for migrobiological research
LO3.	Able to transfer own knowledge and skills in y	une test	with educational reference scientific
L00.	information on microbiology and immunology.	orking	
LO7	Synthesizes and transforms the acquired knowledge f	or the p	rpose of further independent learning
LO7.	S June 51205 and dansforms the acquired knowledge r	or the pt	rpose of further independent fourning.

о́́́итústik-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ Department «Microbiology, Virology and Immunology» Odv rogram of the discipline (Syllabus) SOUTH KAZAKHSTAN MEDICAL ACADEMY AO «Южно-Казахстанская медицинская академия» 044-50/11-12 2p. out of 24

5.	LO disciplines	The l	earning outco	omes of	f the EP with w	hich t	he LO disc	iplines a	re asso	ociated
	LO1	LO 1	Demonstra	tes and	l applies funda	nenta	1 knowled	e in the	field	of biomedical
		clinic	al epidemio	logical	and social-beha	viora	l sciences	se in the	iiciu	or bioinculcul,
			Complies x	with the	standards of n	ublic	health pro	tection	sanitar	y and hygienic
		regin	ne and labor	vitii tiit safety	standards in he	althea	re organize	ations en	nidemi	iological safety
		of the	e environmen	it.	standards in ne	annea		utons, c	Jucin	lological safety
	LO 3	LO 1	0. Apply sci	entific	principles, met	hods	and knowl	edge to	medic	al practice and
	LO 4	resea	rch. Able to a	continu	ous self-education	ion ar	nd developr	nent.		
	LO 5									
6.	Detailed info	rmatio	on about the	discipl	ine					
6.	Venue (buildi Virology and 117, 119b, 51	ng, au Immu 1, 513,	ditorium): So nology. Al-Fa , 514 Telephc	outh K arabi-1 one. w\r	azakhstan Med Square; buildin 1 402	ical Ang No	Academy, 1 b. 2, I-floor	Departme , room N	ent of No. 11	Microbiology, 0, 112, 123a,b,
6.2	2 Number of h	ours	Lecture	s	Practical	La	boratory	SIV	V	ISWP
					lessons	C	lasses			
			10		40		- 7		70 3	
7.	Information	about	teachers			. <u> </u>				
N⁰	FULL NAME	De	grees and	E-mai	il Research inte	rests	Scient	tific	A	chievements
		t t	position				interests	s, etc.		
1.	Seytkhanova	Head	of the	d.m.ı	nbibigul@mai	l.ru	Microbio	cenosis	A	uthor of 95
	Bibigul	depar	rtment,		C					scientific
	Tolegenovna	docto	or of						pu	blications, 1
	C	medi	cal						ema	il. textbook, 1
		scien	ices,						m	onograph, 1
		profe	ssor						textb	ook, 7 manuals
2	Rathek	Cand	lidate of	cailar	ubekuly r@mai	1 m	Fundame	ntals of	Δ	uthor of 15
2.	Savlaubekulv	medi	cal sciences	Sana	ubekury_r@mai	1.1 u	r unuano. clinio	nal of	inte	ernational and
	Suyludockury	mear	eur serenees				narasito	ology	inte	republican
							purusito	105y		scientific
									r	ublications
3	Seriknaeva	Senio	or Lecturer	Tor	araian62@mail	ru	Sanit	arv	Ρ Δ	author of 37
5.	Tamarakhan	beine		1011	larajanoz e man		microbi	ology	1	scientific
	Tvulkubaevna						meroor	01055	nu	blications 1
	i yaikubue viia								Pu	textbook
Δ	Nuralieva	Senio	or Lecturer	N	uralieva70bk ru	1	Sanit	arv	Δ	uthor of 15
	Gulmira	Seme		11	uluile vu / ookile	•	microbi	ology	1	scientific
	Nurpapaevna						meroor	01055	nu	blications 1
	ruipupuo mu								Pu	textbook
5	Abdramanova	Senio	or teacher	ai	gera 0@mail.ri	1	The sta	te of	А	uthor of 15
	Aigervm			ai,	= = = = = = = = = = = = = = = = =		dyshacte	eriosis		scientific
	Asylkhanovna						rheum	atoid	nu	blications. 2
							arthr	tis	r.	textbooks
6.	Sadybek Uldana	Senio	or teacher	sadvh	ek.uldana@ma	il.ru	The relev	ance of	Å	Author of 9
	Abilkvzv						Microbio	logy in	1	scientific

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							the mo	dern	publ	ications, 1
7	Pol	lathekova	Senior	teacher	n shanagat@mail	ru	Worl Fundamer	u ntals of	n 	nanuals othor of 5
7.	Sha	apagat	Semor	teuener	p.onupugut e mun	.10	clinic	cal	SC	cientific
	To	legenkyzy					parasito	ology	publ	ications, 4
									te	xtbooks
8.	Od	zyal Dayana	Senior	teacher	<u>dayana_odzyal@ma</u>	ail.ru	The releva	ance of	Au	thor of 5
	Ed	uardovna					microbiol	ogy in	SC	cientific
							the mo	dern	publ	ications, 1
							Worl	d	ear	ucational
	8				Thematic	nlan			L	ellellts
A	0	Topic title		Summary				<b>Forms</b>	1	Forms/
w	eek			~ J		ule	of	method	ls/	assessment
						pot	Der	learnin	g	methods
						u C	lmr	techno	logies	
		<b>T</b>		E C		<b>X</b>	<u><u> </u></u>			
-	l.	Lecture.	The	Types of	immunity. Organs	LOI	1	Review	7	Feedback
		immunity	01 Regio	of the	immune system.					questions
		nninunity.	Dasic	their	main functions					
		organization	and	Fundamen	itals of					
		functioning of	of the	immunopr	ophylaxis.					
		immune system	m.	Vaccines	and vaccine					
		-		preventior	n of infectious					
				diseases.	Therapeutic and					
				prophylac	tic sera and					
				1mmunogl	obulins. Principles					
		Practical	lesson	Humoral	and cellular factors	1.01	3	Oral a	nswer	Checklist
		Immunity.	1055011.	of nons	pecific immunity.	LO1 LO2	5	to	the	assessment
		Nonspecific		Natural	resistance of the	202		questio	ns of	
		resistance fact	ors.	macroorga	anism. Methods for			the	topic,	
				determinin	ng nonspecific			solution	n of	
				protection	factors and			situatio	nal	
				methods	for assessing the			tasks,		
				1mmunolo	gical status of a			fulfillm	ient of	
				microorga	msm. Phagocytosis.			workbo	in the	
		LIWT/LIW	The	Immunoco	ompetent cells of	LO6	2	Discuss	sion of	Presentatio
		concept	of	the human	body. The concept	200	(4)	the		n, essay on
		intercellular	-	of "imm	unity", the main			present	ation,	the topic,
		cooperation	in	functions	of immunity. Types			prepara	tion	compilation
		immunogenes	is.	of immuni	ity.			of situa	ational	of
				The huma	an immune system			tasks o	on the	situational
				as a diffu	ise organ. Cells of			topic, v	vriting	tasks on the
				the immur	ne system.			essays.		topic.

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2.	Lecture. Antigens.	General characteristics of	LOI	1	Visualization	Feedback
	Antigen presenting	antigens and antigen-			lecture	questions
	cells. Antibodies.	presenting cells, their role in				
	Cellular immune	the induction and regulation				
	system	of the immune response				
	system.	Autoantigens protective				
		Autoantigens. protective				
		antigens.				
		Basic functions of the T-				
		system. Differentiation of T-				
		lymphocytes. Dynamics of				
		antibody formation. Primary				
		and secondary immune				
		response. Immunological				
		memory and tolerance				
	<b>Practical</b> losson	Mathods for assassing the T	LOI	2	Oral answer	Chaolalist
	Specific immune	and D system of human		5		CHECKIISt
	Specific immune	and B-system of numan	LOZ		to the	assessment
	factors.	immunity. Factors of			questions of	
	Antigens and	immunity and assessment of			the topic,	
	antibodies.	the immunological status of			solution of	
		the human body. Antigen-			situational	
		binding cells, their role in the			tasks,	
		induction and regulation of			fulfillment of	
		the immune response.			tasks in the	
		Avidity			workbook	
	LIWT/LIW	Antigens of bacteria and	L.06	2	Discussion of	Presentatio
	General	viruses superantigens	200	(4)	the	n essay on
	characteristics of	Antigons of the human body		(-)	procontation	the topic
	characteristics of	Internation of ontions with			presentation,	ule topic,
	antigens.	interaction of antigens with			preparation	compliation
	The role of	immunocompetent cells of			of situational	of
	immunoglobulin	the body.			tasks on the	situational
	classes in immunity.	Classes of immunoglobulins			topic, writing	tasks on the
		in the immunity of newborns			essays.	topic.
		in connection with their				
		accumulation in the				
		organisms of the mother and				
		fetus. Antibodies. Chemical				
		nature and structure of				
		antibodies or				
		immunoalobuling Classes of				
		immunogiobulins. Classes of				
		minunogiobulins, their main				
		cnaracteristics, differences				
		and features. Antiglobulin				
		antibodies. Anti-idiotype				
		antibodies. The role of				
		immunoglobulins in the				
		immunity of newborns.				
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Department «Microbiology, Virology and Immunology» 044-50/11-12 5p. out of 24 Work program of the discipline (Syllabus) Reactions between antigens 3. Lecture. Serological LO1 1 Thematic Feedback reactions. and antibodies in vitro or questions serological tests, widely used in microbiological and serological (immunological) laboratories for the diagnosis of infectious diseases. Practical lesson. General characteristics of LO1 3 Oral Checklist answer Serological LO2 serological reactions. to the assessment reactions. Reaction mechanism, questions of diagnostic value. Reactions the topic. proceeding with antigen solution of enlargement (agglutination situational reaction. precipitation, tasks, filling immunodiffusion. out а workbook. immunoelectrophoresis, immunoblotting, Coombs reaction). Reactions occurring with the neutralization of the antigen (neutralization reaction, flocculation, hemagglutination inhibition reaction). Reactions involving complement (reaction of complement fixation, immune hemolysis, lysis. immolization). Reactions involving labeled antigens and antibodies (immunofluorescence reaction, ELISA). LIWT/LIW. acid hybridization LO6 2 Discussion of Presentatio Nucleic Applied method. Polymerase chain (4) the n, essay on immunology. reaction. presentation, the topic, Molecular biological compilation DNA sequencing method. preparation methods: NA of situational of hybridization, PCR, tasks on the situational **DNA** sequencing topic, writing tasks on the essays. topic. Lecture. Causative **Biological** LO2 Feedback 4. properties of 1 Lecture agents of purulentpathogens and provocation questions inflammatory microbiological methods for (lecture with and planned purulent-septic diagnosing staphylococcal, streptococcal, meningococcal, infections. mistakes) gonococcal infections. treatment and prevention.

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MEDISINA

AKADEMIASY

	Work pro	ogram of the discipline (Syllabus)			бр. с	out of 24
	Practical lesson.         Causative agents of purulent-inflammatory and purulent-septic infections.         LIWT/LIW.         Causative agents of sexually transmitted diseases.	Morphology, cultural properties, pathogenesis, microbiological diagnostics of staphylococci, pneumococci, streptococci. Principles of laboratory diagnostics. specific prophylaxis. Modern methods of diagnosis and treatment of sexually transmitted infections (syphilis, gonorrhea, urogenital chlamydia).	LO2 LO3 LO4 LO5	3 2 (4)	Oral answer to the questions of the topic, performing laboratory work, filling out a workbook. Discussion of the presentation, preparation of situational tasks on the topic, writing essays, analysis of scientific articles from scientific journals Scopus, Web	Checklist assessment Presentatio n, essay on the topic, compilation of situational tasks on the topic, analysis of scientific articles.
5.	Lecture. Pathogenic clostridia. Causative agents of wound infections.	Pathogenic anaerobes. Biological properties of causative agents of tetanus, gas gangrene and botulism. Methods of microbiological diagnostics and provention	LO2	1	of science (RBL), etc. Review	Feedback questions
	<b>Practical lesson</b> . Causative agents of anaerobic infections.	Morphology, cultural properties, pathogenesis, microbiological diagnostics of clostridia (gas gangrene, tetanus, botulism). Specific prophylaxis. Sowing on Kitt- Taroczy medium.	LO2 LO3 LO4 LO5	3	Oral answer to the questions of the topic, solution of situational tasks, filling out a workbook.	Checklist assessment
	LIWT/LIW. Biological features of Pseudomonas aeruginosa and Haemophilus influenzae.	Microbiological diagnosis of diseases caused by Pseudomonas aeruginosa. Pathogenicity for humans and localization in the patient's body. The role of Pseudomonas aeruginosa in nosocomial infections.	LO6 LO7	2 (4)	Discussion of the presentation, preparation of situational tasks on the topic, writing essays,	Presentatio n, essay on the topic, compilation of situational tasks on the topic,

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		Antibioticresistance.Haemophilusinfluenzae.Localization in the patient'sbody.Rolenhumanpathology.			analysis of scientific articles from scientific journals Scopus, Web of science (RBL), etc.	analysis of scientific articles.
6	<b>Lecture.</b> Causative agents of intestinal infections.	Escherichia coli. Morphology, cultural properties. Knowledge in human pathology. Salmonella is the causative agent of typhoid fever and paratyphoid fever. Morphology, cultural properties, pathogenesis, microbiological diagnostics. Causative agents of salmonellosis. Causative agents of dysentery. The main directions of bacteriological research in acute intestinal diseases.	LO2	1	Lecture - provocation (lecture with planned mistakes)	Feedback questions
	Practical lesson. Causative agents of intestinal infections.	Morphology, cultural properties, pathogenesis, microbiological diagnostics of Escherichia, Shigella, Salmonella. Specific prevention and treatment.	LO2 LO3 LO4 LO5	3	Oral answer to the questions of the topic, performing laboratory work, filling out a workbook.	Checklist assessment
	LIWT/LIW. Causative agents of acute diarrheal infections. Cholera.	Clinical, epidemiological and pathogenetic features of cholera and other acute intestinal infections in the context of modern outbreaks.	LO6 LO7	2 (4)	Discussion of the presentation, preparation of situational tasks on the topic, writing essays, analysis of scientific articles from scientific journals Scopus, Web of science (RBL), etc.	Presentatio n, essay on the topic, compilation of situational tasks on the topic, analysis of scientific articles.

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7.	Lecture. Causative	Causative agents of cholera,	LO2	1	Consulting	Feedback
	agents of especially	plague, anthrax, CCHF.			lecture	questions
	dangerous	Morphology, cultural				•
	infections.	properties, pathogenesis,				
		microbiological diagnostics				
		of pathogens.				
	Practical lesson.	Morphology, cultural	LO2	3	Oral answer	Checklist
	Causative agents of	properties. pathogenesis.	LO3		to the	assessment
	airborne infections.	microbiological diagnostics	LO4		questions of	
		of causative agents of	LO5		the topic.	
		tuberculosis. meningococcal			performing	
		infection. diphtheria.			laboratory	
		whooping cough. Method of			work. filling	
		"cough plates". Allergic tests.			out a	
		specific prophylaxis.			workbook.	
	LIWT/LIW Mid-	Topics of lectures practical	LO1-7	2	Assessment	Oral
	term No1	exercises, self-study covered	2017	(4)	of midterm	response
		during the cycle			control (oral	r
					answer on	
					ticket	
					questions)	
8.	Lecture. Mycoses	Morphology, cultural	LO2	1	Review	Feedback
	and pathogenic	properties, pathogenesis and		_		questions
	protozoa.	classification of fungi and				1
	r	protozoa Microbiological				
		diagnostics. Pathogenicity				
		factors. Sources of invasion,				
		route of infection, life cycle				
		of the parasite.				
	Practical lesson.	Morphology, cultural	LO2	3	Oral answer	Checklist
	Zoonotic pathogens.	properties, pathogenesis,	LO3		to the	assessment
	1 0	microbiological diagnostics	LO4		questions of	
		of plague, brucellosis,	LO5		the topic,	
		anthrax. Specific prophylaxis.			solution of	
					situational	
					tasks, filling	
					out a	
					workbook.	
	LIWT/LIW. West	Quarantine and zoonotic	LO6	2	Discussion of	Presentatio
	Nile fever, Zoonotic	infections in Kazakhstan.	LO7	(4)	the	n, essay on
	cutaneous				presentation,	the topic,
	leishmaniasis.				preparation	compilation
					of situational	of
					tasks on the	situational
					topic, writing	tasks on the
					essays,	topic,
					analysis of	analysis of
					scientific	scientific



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9.	Lecture. Causative agents of respiratory viral infections.	Influenza virus. Parainfluenza viruses. Coronavirus infection. Morphology, cultural properties, pathogenesis and classification.	LO2	1	articles from scientific journals Scopus, Web of science (RBL), etc. Conference lecture	articles. Feedback questions
	<b>Practical lesson</b> . Causative agents of transmissible infections.	Biological features and laboratory diagnosis of relapsing fever, epidemic typhus, Q fever, CCHF. Microbiological diagnosis of transmissible infections. Specific prevention and treatment.	LO2 LO3 LO4 LO5	3	Oral answer to the questions of the topic, solution of situational tasks, filling out a workbook.	Checklist assessment
	LIWT/LIW. Mycoses and pathogenic protozoa.	Molds and their role in human pathology. Pathogenic protozoa. Role in human pathology Microbiological diagnosis of mycoses and protozoal infections. Biological features and laboratory diagnostics of keratomycosis, trichomycosis, candidiasis, sporotrichosis, histoplasmosis.	LO6 LO7	2 (4)	Discussion of the presentation, preparation of situational tasks on the topic, writing essays, analysis of scientific articles from scientific journals Scopus, Web of science (RBL), etc.	Presentatio n, essay on the topic, compilation of situational tasks on the topic, analysis of scientific articles.
10.	Lecture. Human immunodeficiency virus and oncogenic viruses.	General characteristics and microbiological diagnosis of human immunodeficiency virus and oncogenic viruses.	LO2	1	Problematic	Feedback questions
	<b>Practical lesson</b> . Causative agents of acute respiratory viral infections.	Morphology, cultural properties, pathogenesis, microbiological diagnostics of influenza, parainfluenza, as well as adenovirus and coronavirus infections.	LO2 LO3 LO4 LO5	3	Oral answer to the questions of the topic, performing laboratory	Checklist assessment

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		Specific prophylaxis. Biomaterial sampling technique for the diagnosis of adenovirus and coronavirus			work, filling out a workbook.	
		infection.				
	LIWT/LIW. Herpesviruses (alpha, beta, gamma herpesviruses)	Human herpesvirus infections in the 21st century: principles of diagnosis and therapy.	LO6 LO7	2 (4)	Discussion of the presentation, preparation of situational tasks on the topic, writing essays, analysis of scientific articles from scientific journals Scopus, Web of science (RBL), etc.	Presentatio n, essay on the topic, compilation of situational tasks on the topic, analysis of scientific articles.
11.	Practicallesson.The causative agentsof measles, rubella,chickenpoxandmumps.	Morphology, cultural properties, pathogenesis, microbiological diagnostics of measles, rubella, chickenpox and mumps. Specific prophylaxis.	LO2 LO3 LO4 LO5	3	Oral answer to the questions of the topic, solution of situational tasks, filling out a workbook.	Checklist assessment
	LIWT/LIW. Causative agents of neuroviral infections.	Problems of rabies prevention. The current state of the problems of tick-borne encephalitis.	LO6 LO7	3 (4)	Discussion of the presentation, preparation of situational tasks on the topic, writing essays, analysis of scientific articles from scientific journals Scopus, Web of science (RBL), etc.	Presentatio n, essay on the topic, compilation of situational tasks on the topic, analysis of scientific articles.



Department «Microbiology, Virology and Immunology» 044-50/11-12 11p. out of 24 Work program of the discipline (Syllabus) **Practical** 12. lesson. Morphology, cultural LO2 3 Oral answer Checklist Viral hepatitis. properties, pathogenesis, LO3 the assessment to microbiological diagnosis of LO4 questions of viral hepatitis. Virological LO5 topic, the and serological methods for solution of diagnosing viral hepatitis. situational Specific prophylaxis. tasks, filling out а workbook. LIWT/LIW. HIV General characteristics of the LO6 3 Discussion of Presentatio (AIDS). immunodeficiency LO7 (4) human the n, essay on Oncogenic viruses. virus and oncogenic viruses. presentation, the topic, preparation compilation of situational of tasks on the situational topic, writing tasks on the essays, topic, analysis of analysis of scientific scientific articles from articles. scientific journals Scopus, Web science of (RBL), etc. 13. Practical LO2Checklist lesson. General characteristics 4 Oral answer of LO3 the Pathogens enterovirus and rotavirus assessment to questions of enterovirus and infection. Biological features LO4 rotavirus infections. and laboratory diagnosis of LO5 the topic, poliomyelitis. Enteroviral solution of infections caused bv situational COXACKIE and tasks, filling ECHO viruses. Virological and out а serological diagnostic workbook. methods. Prevention. LIWT/LIW. The latest achievements and LO6 2 Discussion of Presentatio Modern research in the world of LO7 (4) diagnostic the n, essay on microbiology. the topic, methods in presentation, microbiology. preparation compilation of situational of situational tasks on the topic, writing tasks on the topic, essays, analysis of analysis of scientific scientific articles from articles. scientific journals

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**SKMA** 

SOUTH KAZAKHSTAN

АО «Южно-Казахстанская медицинская академия»

MEDICAL

ACADEMY

OŃTÚSTIK-QAZAQSTAN

«Оңтүстік Қазақстан медицина академиясы» АҚ

MEDISINA AKADEMIASY

OŃTÚSTIK-QAZAQSTAN мерізіна Акареміасу «Оңтүстік Қазақстан медицина академиясы» Ақ

Work program of the discipline (Syllabus)



SOUTH KAZAKHSTAN

МЕDICAL АСАDEMY АО «Южно-Казахстанская медицинская академия»

044-50/11-12 12p. out of 24

				5	Scopus, Web	
					of science	
					(RBL), etc.	
14	. LIWT/LIW. Mid-	Topics of lecture	es. practical LO	1-7 2	Assessment	Oral
	term No2	exercises self-stu	idv covered		of midterm	response
		during the cycle	ay coverca		control (oral	response
		during the cycle			answer on	
					ricket	
					uestions)	
	Propagation and cond	uct of intermediat	a cortification	15	(ucstions)	
	r reparation and cond			15		
0	Tooching mothods					
<u> </u>		Davion visualiz	ation lastura las	tura provocal	tion (lecture r	with planned
9.1	Lectures	mistolyas) themat	ation lecture, lec	ture - provocal	alastura proh	amatia
0.0		mistakes), thema	<u>ilic, conterence le</u>	cture, consulting	g lecture, probl	
9.2	Practical lessons	Oral answer to	the questions of	the topic, sol	lution of situa	itional tasks,
0.0		performing labora	atory work,fulfilli	nent of tasks in	the workbook.	
9.3	SIW/ISWP	Discussion of the	e presentation, pr	eparation of situ	uational tasks	on the topic,
		writing essays, an	nalysis of scientif	ic articles from	scientific jour	mals Scopus,
0.4		Web of science (I	RBL), etc.	1	1	
9.4	Mid-term	Assessment of m	idterm control (or	al answer on tic	cket questions)	
10.	Evaluation criteria					
10.1	L. Criteria for evaluatin	g the learning out	comes of a subje	ct		
	Learning outcomes of	Unsatisfactory	Satisfactory	Good	Excellen	nt 🛛 🔤
	the subject					
	the subject ''Microbiology and					
	the subject ''Microbiology and Immunology''					
	the subject "Microbiology and Immunology" LO1 Knows the factors	1) cannot	1) can describe	1) u	uses 1) rev	veals the
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity,	1) cannot describe	1) can describe immunotherap	1) ι knowledge ab	uses 1) rev pout importar	veals the nce of
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for	1) cannot describe immunotherapy	1) can describe immunotherap y and	1) u knowledge ab immunotherap	uses 1) rev pout importar py immuno	veals the nce of therapy
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles	1) cannot describe immunotherapy and	1) can describe immunotherap y and immunoprophy	1) u knowledge at immunotherap and	uses 1) rev pout importar py immunor and	veals the nce of therapy
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis	1) cannot describe immunotherapy and immunoprophy	1) can describe immunotherap y and immunoprophy laxis;	1) u knowledge at immunotherap and immunoproph	uses 1) rev pout importar py immunor and yla immunor	veals the nce of therapy prophylaxi
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of	1) cannot describe immunotherapy and immunoprophy laxis;	1) can describe immunotherap y and immunoprophy laxis;	1) u knowledge ab immunotherap and immunoproph xis;	uses 1) rev bout importar by immunor and yla immunor s;	veals the nce of therapy prophylaxi
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the	1) cannot describe immunotherapy and immunoprophy laxis;	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows</li> </ol>	1) u knowledge at immunotherap and immunoproph xis;	uses 1) rev pout importar py immunor and yla immunor s;	veals the nce of therapy prophylaxi
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the	<ol> <li>cannot describe immunotherapy and immunoprophy laxis;</li> <li>does not</li> </ol>	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological</li> </ol>	<ol> <li>1) u knowledge at immunotherap and immunoproph xis;</li> <li>2) explain</li> </ol>	uses 1) rev bout importar by immunor and immunor s; ains 2)	veals the nce of therapy prophylaxi uses
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic	<ol> <li>cannot describe immunotherapy and immunoprophy laxis;</li> <li>does not know</li> </ol>	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> </ol>	<ol> <li>1) u knowledge ab immunotherap and immunoproph xis;</li> <li>2) expla immunologica</li> </ol>	uses 1) rev bout importar immunor and immunor s; ains 2) d immunor	veals the nce of therapy prophylaxi uses logical
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of	<ol> <li>cannot describe immunotherapy and immunoprophy laxis;</li> <li>does not know immunological</li> </ol>	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> </ol>	<ol> <li>1) u knowledge at immunotherap and immunoproph xis;</li> <li>2) expla immunologica reactions.</li> </ol>	uses 1) rev pout importar immuno and immuno s; ains 2) al immuno reactions	veals the nce of therapy prophylaxi uses logical s in
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions	<ol> <li>cannot describe immunotherapy and immunoprophy laxis;</li> <li>does not know immunological reactions.</li> </ol>	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> </ol>	<ol> <li>1) u knowledge at immunotherap and immunoproph xis;</li> <li>2) expla immunologica reactions.</li> </ol>	uses 1) rev pout importar immunor and immunor s; ains 2) il immunor reactions practice.	veals the nce of therapy prophylaxi uses logical s in
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in	<ol> <li>cannot describe immunotherapy and immunoprophy laxis;</li> <li>does not know immunological reactions.</li> </ol>	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> </ol>	<ol> <li>1) u knowledge ab immunotherap and immunoproph xis;</li> <li>2) expla immunologica reactions.</li> </ol>	uses 1) rev pout importar immunor and immunor s; ains 2) al immunor reactions practice.	veals the nce of therapy prophylaxi uses logical s in
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice;	<ol> <li>cannot describe immunotherapy and immunoprophy laxis;</li> <li>does not know immunological reactions.</li> </ol>	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> </ol>	<ol> <li>1) u knowledge at immunotherap and immunoproph xis;</li> <li>2) expla immunologica reactions.</li> </ol>	uses 1) rev pout importar immuno and immuno s; ains 2) al immuno reactions practice.	veals the nce of therapy prophylaxi uses logical s in
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice; LO2 Knows the	<ol> <li>cannot describe immunotherapy and immunoprophy laxis;</li> <li>does not know immunological reactions.</li> <li>does not</li> </ol>	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> <li>knows the</li> </ol>	<ol> <li>1) u knowledge ab immunotherap and immunoproph xis;</li> <li>2) expla immunologica reactions.</li> <li>1) describe</li> </ol>	uses 1) rev pout importar immunor and and immunor s; ains 2) al immunor reactions practice.	veals the nce of therapy prophylaxi uses logical s in classifies
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice; LO2 Knows the taxonomy,	1)cannotdescribeimmunotherapyandimmunoprophylaxis;2)does2)doesnotknowimmunologicalreactions.1)doesnotknowthow	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> <li>knows the causative</li> </ol>	<ol> <li>u knowledge ab immunotherap and immunoproph xis;</li> <li>expla immunologica reactions.</li> <li>describe taxonomic</li> </ol>	uses 1) rev pout importar immunor and immunor s; ains 2) al immunor reactions practice.	veals the nce of therapy prophylaxi logical s in classifies ns of
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice; LO2 Knows the taxonomy, morphological and	1)cannotdescribeimmunotherapyandimmunoprophylaxis;2)does2)doesnotknowimmunologicalreactions.1)doesnotknowthowthowthowthowthecausative	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> <li>knows the causative agents of</li> </ol>	<ol> <li>u knowledge at immunotherap and immunoproph xis;</li> <li>2) explatimmunologica reactions.</li> <li>1) describe taxonomic categories</li> </ol>	uses 1) rev pout importar immunor and immunor s; ains 2) al immunor reactions practice. the 1) pathoger of infectiou	veals the nce of therapy prophylaxi logical s in classifies ns of us diseases
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice; LO2 Knows the taxonomy, morphological and biological properties of	1)cannotdescribeimmunotherapyandimmunoprophylaxis;2)does2)doesnotknowimmunologicalreactions.1)does1)doesnotknowthecausativeagentsof	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> <li>knows the causative agents of infectious</li> </ol>	<ol> <li>1) u knowledge ab immunotherap and immunoproph xis;</li> <li>2) expla immunologica reactions.</li> <li>1) describe taxonomic categories pathogens</li> </ol>	uses 1) rev pout importar immunoy and immunoy s; ains 2) ains 2) ains 2) ains 2) ains 2) the 1) pathogen of infectiou of accordin	veals the nce of therapy prophylaxi uses logical s in classifies ns of us diseases g to
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice; LO2 Knows the taxonomy, morphological and biological properties of pathogens of infectious	1)cannotdescribeimmunotherapyandimmunoprophylaxis;2)does2)doesnotknowimmunologicalreactions.1)doesnotknowthecausativeagentsofinfectious	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> <li>knows the causative agents of infectious diseases;</li> </ol>	<ol> <li>u knowledge ab immunotherap and immunoproph xis;</li> <li>expla immunologica reactions.</li> <li>describe taxonomic categories pathogens infectious</li> </ol>	uses 1) rev pout importar immunor and immunor s; ains 2) al immunor reactions practice. the 1) pathoger of infection of accordin taxonom	veals the nce of therapy prophylaxi logical s in classifies ns of us diseases g to ic
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice; LO2 Knows the taxonomy, morphological and biological properties of pathogens of infectious diseases, epidemiology.	1)cannotdescribeimmunotherapyandimmunoprophylaxis;2)does2)doesnotknowimmunologicalreactions.1)doesnotknowthecausativeagentsofinfectiousdiseases;	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> <li>knows the causative agents of infectious diseases;</li> <li>understands</li> </ol>	<ol> <li>u knowledge at immunotherap and immunoproph xis;</li> <li>2) explaimmunologica reactions.</li> <li>1) describe taxonomic categories pathogens infectious diseases;</li> </ol>	uses 1) rev pout importar immunor and immunor s; ains 2) al immunor reactions practice. the 1) pathoger of infectiou of accordin taxonom categorie	veals the nce of therapy prophylaxi uses logical s in classifies ns of us diseases g to nic es;
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice; LO2 Knows the taxonomy, morphological and biological properties of pathogens of infectious diseases, epidemiology, mechanisms and ways of	1)cannotdescribeimmunotherapyandimmunoprophylaxis;2)does2)does1)doesnotknowimmunologicalreactions.	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> <li>knows the causative agents of infectious diseases;</li> <li>understands the</li> </ol>	<ol> <li>u knowledge at immunotherap and immunoproph xis;</li> <li>2) explaimmunologica reactions.</li> <li>1) describe taxonomic categories pathogens infectious diseases;</li> <li>2) knows how</li> </ol>	the 1) pathoger of infectiou of accordin taxonom categorie v to 2) ind	veals the nce of therapy prophylaxi uses logical s in classifies ns of us diseases g to nic es; lependently
	the subject "Microbiology and Immunology" LO1 Knows the factors and types of immunity, its significance for humans, the principles of immunoprophylaxis and immunotherapy of human diseases, the mechanisms of the formation of allergic reactions, types of immunological reactions and their application in medical practice; LO2 Knows the taxonomy, morphological and biological properties of pathogens of infectious diseases, epidemiology, mechanisms and ways of transmission of	1)cannotdescribeimmunotherapyandimmunoprophylaxis;2)does2)doesnotknowimmunologicalreactions.1)doesnotknowthecausativeagentsofinfectiousdiseases;2)doesdoesnot	<ol> <li>can describe immunotherap y and immunoprophy laxis;</li> <li>knows immunological reactions.</li> <li>knows the causative agents of infectious diseases;</li> <li>understands the morphological</li> </ol>	<ol> <li>u knowledge ab immunotherap and immunoproph xis;</li> <li>expla immunologica reactions.</li> <li>describe taxonomic categories pathogens infectious diseases;</li> <li>knows how conduct</li> </ol>	the 1) pathoger of infectiou of accordin taxonom categorie v to 2) ind conducts	veals the nce of therapy prophylaxi uses logical s in classifies ns of us diseases g to ic es; lependently

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	Department «Microbiology, Virology and Immunology»				044-50/11-12		
L	Work program of the discipline (Syllabus)     13p. out of 24						
	pathogens, pathogenesis,	morphological	and tinctorial	morphological	morphological		
	main clinical	and tinctorial	properties of	research and	study and interprets		
	manifestations of the	properties of	pathogens;	describe the	the morphological		
	disease, immunity,	pathogens;	3) mentions	morphological	and tinctorial		
	principles of laboratory	3) does not	cultural	and tinctorial	properties of		
	diagnostics, specific	mention	properties;	properties of	pathogens;		
	treatment and	cultural	4) has	pathogens; 3)	3) demonstrate the		
	prevention;	properties;	information	inoculates the	technique of		
		4) does not	about the	studied material	inoculation of the		
		have	epidemiology,	on nutrient	test material on		
		information	pathogenesis,	media, has	appropriate nutrient		
		about the	clinical	knowledge of	media and explain		
		epidemiology,	manifestations,	cultural	the cultural		
		pathogenesis,	immunity of	properties;	properties;		
		clinical	infectious	4) has knowledge	4) can substantiate		
		manifestations,	diseases;	in the field of	the epidemiology,		
		immunity of	5) describe	epidemiology,	pathogenesis,		
		diseases	laboratory	pathogenesis,	manifactations of		
		5) does not	diagnostics:	manifestations	infactious diseases		
		describe	6) knows	immunity of	the mechanism of		
		methods of	specific	infectious	immunity.		
		laboratory	medical	diseases.	5) can choose an		
		diagnostics.	preparations.	5) owns effective	effective method of		
		6) does not	7) understands	methods of	laboratory		
		know specific	the	laboratory	diagnostics and		
		medical	effectiveness	diagnostics;	implement it;		
		preparations;	of specific	6) can separate	6) selects specific		
		7) does not	prevention	specific	medicinal		
		understand the	-	therapeutic drugs	preparations taking		
		effectiveness of		depending on	into account		
		specific		their sensitivity;	sensitivity;		
		prophylaxis		7) substantiate	7) can explain the		
				the effectiveness	effectiveness of		
				of specific	specific		
				prophylaxis.	prophylaxis and		
					recommend it.		
	LO3 Interprets the	1) does not	1) understands	1) is able to	1) isolates a pure		
	results of	understand the	the isolation of	isolate a pure	culture of the		
	bacteriological,	isolation of a	a pure culture	culture of the	pathogen by		
	virological and	pure culture of	of the	patnogen by	Dacteriological		
	immunological research	the pathogen by	patnogen by	Dacteriological	research method		
	methods;	oxomination	he memod of	examination;	and interprets the		
		(2) does not	research	chicken embruo	2) can infact call		
		describe the	2) describe the	by virological	cultures chicken		
1		describe une	$\omega$ account the the	by virological	cultures, chickell		

chick embryo 3) has knowledge

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SOUTH KAZAKHSTAN

OŃTÚSTIK-QAZAQSTAN

АКАДЕМІАЯ «Оңтүстік Қазақстан медицина академиясы» АҚ



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МЕDICAL АСАDEMY АО «Южно-Казахстанская медицинская академия»

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Work program of the discipline (Syllabus)

		by virological testing; 3) does not know about enzyme immunoassay, precipitation	by virological testing; 3) knows about enzyme immunoassay, precipitation reactions.	of enzyme immunoassay, precipitation reactions.	examination and evaluate the result under a microscope; 3) can read the result of enzyme immunoassay,		
	LO4 Analyzing the results of bacteriological, virological and immunological diagnostic methods and antibiogram, argues own recommendations on the use of antibiotics and immunobiological	1) does not know bacteriological, virological and immunological methods; 2) does not understand antibiotics and immunobiologi	<ol> <li>knows bacteriological</li> <li>virological</li> <li>and</li> <li>immunological</li> <li>methods;</li> <li>understands</li> <li>antibiotics and</li> <li>immunobiologi</li> <li>cal</li> </ol>	<ol> <li>interprets the results of bacteriological, virological and immunological methods;</li> <li>has knowledge of antibiotics and immunobiologica l preparations.</li> </ol>	precipitation reaction. 1) analyze the results of bacteriological, virological and immunological methods; 2) offers its own options for the use of antibiotics and immunobiological		
	preparations; LO5 Possesses the skills of taking biomaterial and sending the test material for microbiological examination.	cal preparations. 1) does not understand the studied material; 2) does not know laboratory research methods.	<ul> <li>preparations.</li> <li>1) understands</li> <li>the studied</li> <li>material;</li> <li>2) knows</li> <li>laboratory</li> <li>research</li> <li>methods.</li> </ul>	<ol> <li>has information about the research material required by the type of disease;</li> <li>describes the methods of laboratory research.</li> </ol>	<ol> <li>can choose material for research depending on the type of disease;</li> <li>most effectively directs the study of research material.</li> </ol>		
	LO6 Able to transfer own knowledge and skills in working with educational, reference, scientific information on microbiology and immunology;	1) does not know about the methods used in laboratory research of infectious diseases	1) knows about the methods used in laboratory research of infectious diseases	1) get acquainted with scientific papers on new methods used in laboratory research of infectious diseases	<ol> <li>reads scientific papers and shares news about new methods used in laboratory research of infectious diseases</li> <li>Demonstrates</li> </ol>		
10	transforms the acquired knowledge for the purpose of further independent learning.	desire for continuous self-education and development	complete tasks	completes tasks correctly	motivation for independent work, creative approach to completing tasks		
Che	The chief is the contraction of						

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«Оңтүстік Қазақстан медицина академиясы» АҚ		АО «Южно-Казахстанская медици	инская академия»
Department «Microbiology, Virology and	Immunol	ogy»	044-50/11-12
Work program of the discipline (S	yllabus)		15p. out of 24

#### **Current control:**

# EVALUATION CRITERIA FOR THE PRACTICAL LESSON CHECKLIST

N⁰	№         Criteria for evaluation		]	Level	
		Excellent	Acceptable	Requires correction	Unacceptable
1	Oral response to questions on the topic	17-20	15-17	10-15	0-10
2	Solving situational problems / Performing laboratory work	26-30	20-26	15-20	0-15
3	Completing assignments on the workbook	47-50	35-46	25-34	0-24
	Final grade:	90-100	70-89	50-69	0-49

# 1. Oral answer to the questions of the topic

N⁰	Criteria for evaluation	Points
1	It is put in the event that the learner did not make any mistakes or inaccuracies during	47-50
	the answer. He orients himself in theories, concepts and directions in the discipline	
	other disciplines.	
2	It is put in the event that the learner during the answer did not make gross errors in the answer, made unprincipled inaccuracies or fundamental errors corrected by the student himself, managed to systematize the program material with the help of the teacher.	35-46
3	It is put in the event that the learner made inaccuracies and unprincipled mistakes during the answer, limited himself only to the educational literature indicated by the teacher, experienced great difficulties in systematizing the material.	25-34
4	It is put in the event that the learner made fundamental mistakes during the answer, did not work through the main literature on the topic of the lesson; does not know how to use the scientific terminology of the discipline, answers with gross stylistic and logical errors.	0-24

# 2. a) Solution of situational problems

N⁰	Criteria for evaluation	Points
1	The learner showed original thinking, showed a deep knowledge of the material, used	26-30
	the scientific achievements of other disciplines when answering. Used scientific	
	terminology.	
2	Actively participated in the work, showed knowledge of the material, made minor	20-26
	inaccuracies or fundamental errors corrected by the learner himself	
3	When working in a group, he was passive, made inaccuracies and unprincipled	15-20
	mistakes, and experienced great difficulties in systematizing the material.	
4	He did not take part in the work of the group, answering the questions of the teacher,	0-15
	made fundamental mistakes and inaccuracies, did not use scientific terminology	
	when answering.	

AKADEMIASY



SOUTH KAZAKHSTAN MEDICAL ACADEMY

АО «Южно-Казахстанская медицинская академия»

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#### b) Performing laboratory work

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N⁰	Criteria for evaluation	Points
1	Completed practical and laboratory work in a timely manner and without any errors and submitted reports on them, took an active part in the discussion of the results of the work, made reasonable conclusions, and showed original thinking	26-30
2	Timely completed practical and laboratory work and submitted reports on them without fundamental remarks, took an active part in the discussion of the results of the work	20-26
3	Timely completed practical and laboratory work and submitted reports on them. During work, he was not active, he needed the help of a teacher	15-20
4	Untimely submitted reports on practical work, made fundamental mistakes in their implementation. Completed not all the practical work provided by the program. Did not participate in the discussion of the results of the work.	0-15

#### 3. Completing assignments on the workbook

N⁰	Criteria for evaluation	Points
1	The learner completed the work without mistakes or shortcomings. Allowed no more than one flaw	47-50
2	The learner completed the work in full, but made in it: no more than one serious	35-46
	mistake and one defect. Allowed no more than two shortcomings.	
3	The learner correctly completed at least half of the work and made: no more than	25-34
	two gross mistakes or no more than one gross and one non-gross error and one	
	defect. No more than two or three blunders, or one blunder and three shortcomings.	
	In the absence of errors, but in the presence of four or five shortcomings.	
4	The learner made the number of errors (shortcomings) exceeding the norm. Didn't	0-24
	start work. Correctly completed no more than 10% of all tasks	

As a rule, several forms of knowledge control are used in the lesson. The journal is given an average rating.

## **Checklist for LIWT**

### GRADING CRITERIA FOR LEARNERS' INDEPENDENT WORK UNDER THE GUIDANCE OF A **TEACHER**

### **Topic presentation**

Form	Grade	Criteria for evaluation
control		
Topic	Excellent	The presentation was made independently, on time, with a volume
presentation	A + (4,0; 95-100%)	of at least 25 slides. At least 7 literary sources were used. The slides
	A-(3,76; 90-94%)	are informative and concise. During the defense, the author
		demonstrates deep knowledge on the topic. Does not make mistakes
		when answering questions during the discussion.
	Good	The presentation was made independently, on time, with a volume
	B+(3,33;85-89%)	of at least 23 slides. At least 6 literary sources were used. The slides
	B- (2,67; 75-79%)	are informative and concise. During the defense, the author
	C+ (2,33;70-74%)	demonstrates good knowledge on the topic. Makes minor mistakes

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		when answering questions that he corrects.
	Satisfactorily	The presentation was made independently, on time, with a volume
	C (2,0;65-69%)	of at least 20 slides. At least 5 literary sources were used. The slides
	C- (1,67;60-64%)	are not meaningful. When defending, the author makes fundamental
1	Д+(1,33;55-59%)	mistakes when answering questions.
	Д(1,0; 50-54%))	
	Unsatisfactory	The presentation was not delivered on time, the volume is less than
3	FX (0,5; 25-49%)	5-10 slides. Less than 5 literary sources were used. The slides are
	F (0; 0-24%)	not meaningful. When defending, the author makes gross mistakes
		when answering questions. Does not focus on own material.

#### **Preparation of written creative work (essav)**

Form	Grade	Criteria for evaluation
control		
Preparation	Excellent	The content of the work is fully consistent with the topic; the topic is
of written	A + (4,0; 95-100%)	covered in depth and reasoned. Slender in composition, logical and
creative	A- (3,76; 90-94%)	consistent presentation of thoughts. The problem of the essay is
work (essay)		clearly formulated. There are no actual errors. The conclusion
		contains conclusions that logically follow from the content of the
		main part.
	Good	The theme is sufficiently fully and convincingly revealed with minor
	B+(3,33;85-89%)	deviations from it. The thesis corresponding to the topic of the essay
	B- (2,67; 75-79%)	is clearly formulated. In the main part, it is logical, connected, but the
	C+(2,33;70-74%)	thesis put forward is not fully proved, there are single factual
		inaccuracies.
	Satisfactorily	A correct, but one-sided or insufficiently complete answer to the
	C (2,0;65-69%)	topic is given. Deviations from it or individual errors in the
	C- (1,67;60-64%)	presentation of the factual material were made. The material is
	Д+(1,33;55-59%)	presented quite logically, but there are some violations of the
	Д(1,0; 50-54%))	sequence of expression of thoughts. Conclusions do not fully
		correspond to the content of the main part
	Unsatisfactory	the topic is completely unrevealed, which indicates superficial
	FX (0,5; 25-49%)	knowledge. It is characterized by a random arrangement of the
	F (0; 0-24%)	material, the lack of communication between the parts. Differs in the
		presence of gross speech errors.

#### Drawing up situational tasks

Form control Grade		Grade	Criteria for evaluation
Drawing	up	Excellent	The learner showed original thinking, showed a deep knowledge of
situational		A + (4,0; 95-100%)	the material, interdisciplinary connections were used in the
tasks		A- (3,76; 90-94%)	preparation of the situational task. Used scientific terminology.
			Identified the main symptoms of the disease, microbiological
			laboratory data are correct.
		Good	The learner, when compiling the task, made unprincipled
		B+(3,33;85-89%)	inaccuracies, corrected by the student himself during the analysis of
		B- (2,67; 75-79%)	the task. Used scientific terminology. Identified the main symptoms

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C+ (2,33;70-74%)	of the disease, microbiological laboratory data are correct.		
Satisfactorily	The learner, when compiling a situational task, made inaccuracies		
C (2,0;65-69%)	and unprincipled mistakes, used scientific terminology. Experienced		
C-(1,67;60-64%)	great difficulties in organizing the material. I was able to identify		
Д+(1,33;55-59%)	the main symptoms of the disease, microbiological laboratory data		
Д(1,0; 50-54%))	are indicated with slight inaccuracies.		
Unsatisfactory	The learner made a situational task, made fundamental mistakes and		
FX (0,5; 25-49%)	inaccuracies. When compiling the task, he could not identify the		
F (0; 0-24%)	main symptoms of the disease, and also indicated incorrect		
	microbiological laboratory data.		

# Analysis of scientific articles

Form control	Grade	Criteria for evaluation
Analysis of	Excellent	The work was done neatly and delivered on time, written
scientific	A + (4,0; 95-	independently on at least 5 pages of printed text. Thoughts on the
articles	100%)	problem are presented in the form of brief theses, giving arguments.
	A- (3,76; 90-94%)	In the text of the work references to the authors are indicated
		everywhere. When protecting the text does not read, but tells.
		Confidently and accurately answers all questions asked. For work, I
		used articles no more than 5 years old and with a high Impact factor.
	Good	The work was done neatly and delivered on time, written
	B+ (3,33;85-89%)	independently on at least 4 pages of printed text. Thoughts on the
	B- (2,67; 75-79%)	problem are presented in the form of brief theses, but without giving
	C+ (2,33;70-74%)	arguments. In the text of the work references to the authors are
		indicated everywhere. When protecting the text does not read, but
		tells. When answering questions, he makes minor mistakes. For work,
		I used articles no more than 5 years old and with a high Impact factor.
	Satisfactorily	The work was done neatly and delivered on time, written
	C (2,0;65-69%)	independently on at least 3 pages of printed text. Thoughts on the
	C- (1,67;60-64%)	problem are presented scattered, without giving arguments. In the text
	Д+(1,33;55-59%)	of the work references to the authors are not indicated everywhere.
	Д(1,0; 50-54%))	When protected, the text reads. Uncertainty answers questions, makes
		fundamental mistakes. For work, I used articles more than 5 years old
		and with an average Impact Factor.
	Unsatisfactory	The work is written on less than 3 printed sheets. Thoughts are
	FX (0,5; 25-49%)	scattered. There are no references to the authors in the text of the
	F (0; 0-24%)	work. There are no arguments. When protected, the text reads. When
		answering questions, he makes gross mistakes, does not orient
		himself in the material. For work, I used articles more than 5 years
		old and with a low Impact factor.
Intermediate cer	tification	

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# MIDTERM CONTROL

Midterm is carried out in the form of an oral answer to the questions of the ticket. Each ticket consists of 3 theoretical questions. In total, 90-100 points are given as a maximum.

Form control	Grade	Criteria for evaluation
Assessment of boundary control (oral answer to ticket questions)	Excellent A + (4,0; 95-100%) A- (3,76; 90-94%)	<ol> <li>the content of the ticket material is disclosed in full;</li> <li>the material is presented correctly, in a certain logical sequence, terminology is accurately used;</li> <li>the ability to illustrate theoretical positions with concrete examples, to apply them in a new situation is shown;</li> <li>the answer is independent, without leading questions;</li> <li>one or two inaccuracies were made when covering minor issues, which are corrected after comments or leading questions.</li> </ol>
	<b>Good</b> B+ (3,33;85-89%) B- (2,67; 75-79%) C+ (2,33;70-74%)	The answer mostly satisfies the requirements for an "excellent" rating, but at the same time has one of the drawbacks: 1) there are small gaps in the presentation that do not distort the essence of the content of the answer; 2) one or two shortcomings were made when covering the main content of the answer, corrected after the examiner's remark; 1) 3) an error was made or more than two shortcomings in the coverage of secondary issues, which are corrected after the examiner's remark.
	Satisfactorily C (2,0;65-69%) C- (1,67;60-64%) Д+ (1,33;55-59%) Д(1,0; 50-54%))	<ol> <li>the content of the material is incompletely or inconsistently disclosed, but a general understanding of the issue and skills sufficient for further assimilation of the material are demonstrated;</li> <li>there were difficulties or mistakes were made in the definition of concepts, the use of terminology, corrected after several leading questions;</li> <li>with incomplete knowledge of the theoretical material, insufficient formation of competencies, skills and abilities was revealed, the student cannot apply the theory in a new situation</li> </ol>
	Unsatisfactory FX (0,5; 25-49%) F (0; 0-24%)	<ol> <li>the main content of the educational material is not disclosed;</li> <li>ignorance or misunderstanding of the most or most important part of the educational material is revealed;</li> <li>errors were made in the definition of concepts, when using terminology, which were not corrected after several leading questions.</li> <li>the answer to the question is completely absent.</li> <li>refusal to answer.</li> </ol>

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## CRITERIA FOR EVALUATING THE QUALITY OF THE TRAINEE'S ANSWER TO THE TICKET AT THE MIDTERM CONTROL

The ticket consists of 3 questions. Questions 1 and 2 have a maximum of 30 points, and Question 3 has a maximum of 40 points. The maximum total is 100 points.

	Number of points for each			
Criteria for evaluating student responses	question			
	1 question	2 question	3 question	
The learner did not answer the question	0	0	0	
The learner did not show even a superficial knowledge of the	7	7	10	
essence of the question posed, giving an answer in relation to				
any term and general concept due to the examiner's leading				
question				
The learner, answering the question of the ticket, is poorly	15	15	20	
oriented in the compulsory literature, makes gross mistakes in				
covering fundamental, key issues.				
When answering, the student needs additional questions, makes	20	20	25	
mistakes in the interpretation of individual, non-key points.				
The learner correctly answers the question posed within the	25	25	30	
framework of the compulsory literature, minor single				
inaccuracies are possible.				
The learner answers the question correctly, fully, uses additional	30	30	40	
literature.				
TOTAL max for each question:	30	30	40	
TOTAL max per ticket:		100		

Multi-point system of knowledge assessment						
Score letter system	Digital equivalent of	Percentage	Assessment according to the traditional			
	points		system			
Α	4,0	95-100	Excellent			
A -	3,67	90-94				
B +	3,33	85-89	Good			
В	3,0	80-84				
В -	2,67	75-79				
C +	2,33	70-74				
С	2,0	65-69	Satisfactorily			
C -	1,67	60-64				
D+	1,33	55-59				
D-	1,0	50-54				
FX	0,5	25-49	Unsatisfactory			
F	0	0-24				
11. Learning Res	ources					

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Electronic	№	Name	Link		
resources,	1	SKMA repository	http://lib.ukma.kz/repository		
including but	2	Digital catalogue			
not limited to:			http://10.10.202.52		
databases,			http://89.218.155.74		
simulation	3	- For internal use	http://rmebrk.kz/		
professional	4	- For external use	http://www.studmedlib.ru		
blogs websites	5	Republican interuniversity electronic	https://online.zakon.kz/Medicine		
other electronic		library			
reference	6	Student Advisor	https://zan.kz/ru		
materials (e.g.	7	Paragraph	https://aknurpress.kz/login		
video, audio,	8	"Law" base of normative legal acts	https://elibrary.ru/		
digests)	9	"BooksMed" Subert pour le kitan valach	http://www.booksmed.com		
	10	(Web of acience) (Thomson Deuters)	http://www.booksined.com		
	10	«web of science» (Thomson Retters)	http://apps.weboiknowiedge.com		
	11	«Science Difect» (Elsevier)	<u>nups://www.sciencedirect.com</u>		
	12	«Scopus» (Elsevier)	www.scopus.com		
	13		https://www.ncbi.nlm.nin.gov/pubmed		
Electronic	I. B. I	. Seytkhanova, Sh. Zh. Kurmanbekova, Sh	n. 1. Polatbekova, Sh.Zh. Gabdrakhmanova,		
textbooks	A.N.	Tolegen. CAUSATIVE AGENTS	OF ACUTE RESPIRATORY VIRAL		
	INFEC	LIOUS DISEASES (IIIIueiiza VII	us, adenovirus, coronavirus) (1 part)		
	$\frac{\Pi \Pi P}{2} P T$	<u>ap://ii0.ukina.kz/wp-content/upioads/2022/10/iiustrated-teachinatenai-eng-2.pui</u>			
	2. D. I A N 7	N. Tolegen. Pathogens of children's viral infections (measles rubella chickenpox and			
	A.N.	umps virus) (Part II) http://lib.ukma.kz/wp-content/uploads/2022/10/illustrated-			
	textbo	structure (1 art 1) <u>mtp.//10.ukma.kz/wp-content/upioads/2022/10/11ustrated-</u>			
	<u>B T Sevikhanova A A Abdramanova A N Tolegen P Vinoth kumar I ecture</u>				
	compolex on the subject "Microbiology and immunology " (General Microbiology)				
	httn://	ib ukma kz/wp-content/uploads/2022/10/I	ecture-complex-General-Microbiology-		
	2022 r	odf	keture complex General Microbiology		
	4. B.T	. Sevtkhanova, A.A. Abdramanova, A.N.	Tolegen, P. Vinoth kumar LECTURE		
	COM	PLEX ON THE SUBJECT "MICROBIC	OLOGY AND IMMUNOLOGY"(Private		
	Micro	biology) http://lib.ukma.kz/wp-content/	/uploads/2022/10/Lecture-complex-Private-		
	Micro	biology-2022.pdf	- <u>-</u>		
Literature	Basic	literature			
	1. Mu	rray P. R., Rosenthal K. S., Pfaller M. A.M	edical Microbiology Mosby, 2015		
	2. W. I	Levinson McGraw-Hill. Review of Medica	l Microbiology and Immunology, 2014		
	Addit	ional literature			
	1. Sap	barbekova A.A. Microbiology and virol	ogy : educ. manual Second Edition		
	Аlmaty : ЭСПИ, 2023 188 с				
12. Politics of discipline					
Mandatory atter	ndance of	of lectures and practical classes according t	to the schedule;		

• Do not be late for classes;

• Be in special clothes in the classroom (robe, caps);

• Do not miss classes, in case of a valid reason (illness, etc.) Provide a timely certificate, etc.;

• Work off missed classes in accordance with the established schedule, rules and requirements;

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### • Active participation in the educational process;

- Comply with intra-academic rules and ethics;
- Timely and correctly perform the assigned work and task, LIW;
- Failure to complete the task, the presence of missed lectures and laboratory classes leads to a decrease in the final grade;
- If one lecture session is missed without a valid reason, the penalty point is 2 points and is deducted from the midterm control.
- If the deadline is missed without a valid reason, 0 points are given.
- If the final rating is less than 30 points, the student is not allowed to take the exam;
- Observe subordination with teachers and fellow students;
- Take care of the department's property.

• Those who have taken part in olympiads and conferences and won prizes will be exempted from OSPE/OSKE.

• In order to motivate learners, with active participation in each practical and LIWGT classes; when completing the tasks of the LIWGT with the examination of articles in journals with the impact factor Scopus, Web of science, etc., students are awarded a diploma of the 1st degree and letters of thanks to their parents.

• In order to encourage students, if the total score in the subject is between 90% and 100%, they will be awarded a letter of appreciation at the end of each semester.

13. Academic policy based on the moral and ethical values of the academy

Academic policy. P. 4 Code of honor of students

Grading policy for the discipline: The final grade of the learner at the end of the course is made up of the sum of the admission rating (ARA) and the final control grade (OIC) and is set according to the point-rating letter system. IO = ORD + OIC

The admission rating score (ORA) is equal to 60 points or 60% and includes: current control score (OTC) and midterm control score (ORC).

The assessment of current control (OTC) is the sum of the average grade for practical training + the average grade of SRO

The midterm control score (CQR) includes an average score of 2 colloquia.

The admission rating score (60 points) is calculated by the formula: ORC avg x 0.2 + OTK avg x 0.4

The final control (IC) is carried out in the form of testing and the learner can get 40 points or 40% of the total mark.

During testing, the teacher is asked 50 questions.

The calculation of the final control is carried out as follows: if the learner answered correctly 45 questions out of 50, then this will be 90%. 90 x 0.4 = 36 points.

The final mark is calculated if the student has positive marks both in the admission rating (RD) = 30 points or 30% or more, and in the final control (IC) = 20% or more.

Final grade (100 points) = ORC cf x 0.2 + OTC cf x 0.4 + IC x 0.4

Penalty points are subtracted from the average score of the current control.

### 14. Approval and revision

14. Утверждение и пересмотр				
Лата утверждения	Протокол № /0/	Ф.И.О. заведующего	Подпис	
9806 2092		Сейтханова Б.Т.	1100	
Дата одобрения	Протокол № //	Ф.И.О. председателя КОП	House	
05,06.2023		Садыкова А.Ш.	Al-	

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