

ONTÜSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Department «Microbiology, Allergology and Immunology»		50-11
Working curriculum of the discipline «Microbiology and Immunology»		1p. out of 28

Syllabus

Working Curriculum for the Discipline «Microbiology and Immunology» Educational program 6B10115 «Medicine»

1.	General information about the discipline		
1.1	Discipline code: MI 2225	1.6	Academic year: 2025-2026
1.2	Name of discipline: Microbiology and immunology	1.7	Course:2
1.3	Prerequisites: -	1.8	Semester: 4
1.4	Post-requests: Infectious diseases and infection control	1.9	Number of credits (ECTS): 5
1.5	Cycle: BD	1.10	Component: UC
2.	Description of the discipline		
It forms knowledge about the morphophysiology and genetics of microorganisms, etiopathogenesis, immunity, laboratory diagnostics, prevention, and further promotes understanding of the skills of immunological diagnostic methods and mechanisms of functioning of the immune system, observing the norms of the legislation of the Republic of Kazakhstan. Applies scientific knowledge based on evaluation of results for the diagnosis and treatment of diseases.			
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 morphology and physiology; the role of microorganisms in the etiology and pathogenesis of infectious diseases; the main clinical manifestations and the prevalence of the diseases caused; specific diagnosis, prevention and treatment of infectious diseases. The student, analyzing the results of diagnostic methods for antibiogram, argues his own recommendations for the use of antibiotics and immunobiological preparations.			
5.	Learning outcomes (RO disciplines)		
LO1.	Has knowledge of types and factors of immunity, mechanisms of allergic reactions, principles of immunoprophylaxis and immunotherapy, and understands their application in medical practice.		
LO2.	Masters the taxonomy of infectious disease pathogens, their morphological and biological properties, transmission routes and pathogenesis, clinical manifestations, immunity features, laboratory diagnostic methods, as well as specific methods of treatment and prevention.		
LO3.	Knows bacteriological, virological, and immunological research methods and is able to interpret their results.		
LO4.	Based on obtained data, provides well-founded recommendations on the use of antibiotics and immunobiological preparations.		
LO5.	Possesses skills in proper collection of biological material in accordance with clinical requirements and its referral for microbiological investigation.		

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Department «Microbiology, Virology and Immunology»		50-11-
Working curriculum of the discipline «Microbiology and Immunology»		2p. out of 28

LO6.	Is able to work with educational, reference, and scientific literature in the field of microbiology and immunology and apply the acquired knowledge in practice.													
LO7.	Analyzes and synthesizes acquired knowledge, effectively applying it for professional and scientific self-development.													
5.1	LO disciplines	The learning outcomes of the EP with which the LO disciplines are associated												
	LO 1 LO 2	LO 1. Applies fundamental knowledge of biomedical, clinical, epidemiological, and social-behavioral sciences to practice.												
	LO 3 LO 4	LO 3. Promotes activities within the framework of the RK health legislation to ensure quality health care.												
	LO 5 LO 6 LO 7	LO 7. Observes the norms of public health protection, sanitary and hygienic regime and norms of labor safety in health care organizations, epidemiological safety of the environment.												
6.	Detailed information about the discipline													
6.1	Venue (building, auditorium): South Kazakhstan Medical Academy, Department of Microbiology, Allergology and Immunology. Al-Farabi-1 Square; building No. 2, I-floor, room No. 110, 112, 123a,b, 117, 119b7 Telephone. w/n 402													
6.2	Number of hours 150	Lectures		Practical lessons		Laboratory classes		ISWP		SIW				
		10		40		-		15		85				
Type of training	Number of credits	Number of hours	1	2	3	4	5	6	7	8	9	10	11	12
lecture	5	10	1	1	1	1	1	1	1	1	1	1	-	-
pract. less		40	3	3	4	3	3	4	3	3	4	3	3	4
IWLT		15	1	1	1	2	1	1	1	2	1	1	1	2
IWL	85-15=70		6	6	6	6	6	6	6	6	6	6	5	5
			11	11	12	11	11	12	11	11	12	11	11	12
7.	Information about teachers													
№	FULL NAME				Degrees and position				E-mail					
1.	Seytchanova Bibigul Tolegenovna				Head of the department, doctor of medical sciences, professor				d.m.n. bibigul@mail.ru					
2.	Ratbek Saylaubekuly				Candidate of medical sciences				sailaubekuly_r@mail.ru					
3.	Nuralieva Gulmira Nurpapaevna				Senior teacher				nuralieva70@bk.ru					
4.	Zhakupova Zhanat Yerikovna				Senior teacher				zhanna.dzhakupova@inbox.ru					
5.	Polatbekova Shapagat Tolegenkyzy				Senior teacher				p.shapagat@mail.ru					
6.	Sadybek Uldana Abilkyzy				Senior teacher				sadybek.uldana@mail.ru					
7.	Argimbek Maral Pernebekovna				Teacher				Argynbek07@mail.ru					

8 Thematic plan						
Wee k	Topic title	Summary	RO module	Number of hours	Forms/ methods/ learning technologies	Forms/ assessment methods
1.	Lecture. The doctrine of immunity. Basic principles of organization and functioning of the immune system.	Types of Immunity (Innate and Acquired). Central and Peripheral Organs of the Immune System. Immunocompetent Cells (T- and B-lymphocytes, Macrophages, Natural Killers, etc.) and Their Functions. Basic Mechanisms of the Immune Response. Principles of Interaction Between Components of the Immune System.	LO1	1	Review	Feedback questions
	Practical lesson. Immunity. Nonspecific resistance factors.	Humoral and Cellular Factors of Nonspecific Immunity. Natural Resistance of the Host Organism. Methods for Determining Nonspecific Defense Factors and Assessing the Immunological Status of the Organism. Phagocytosis.	LO1 LO2	3	Preparation and protection of a poster report, solution of situational tasks, fulfillment of tasks in the workbook.	Assessment by the checklist
	LIWT/LIW. Phases of the Immune Response and Intercellular Signaling Assignments for LIW: 1. Briefly describe each phase of the immune response in the form of a table. 2. Compare the biological functions of two different cytokines. 3. Write a mini-essay (150–200 words) on the topic: “What diseases can result from impaired intercellular signaling?” 4. Work with illustration: Draw a diagram of the phases of the immune response and the pathways of action of	Main Phases of the Immune Response: Induction, Activation, Effector, and Regression. Types of Intercellular Signals: Cytokines, Chemokines, Interleukins. Mechanisms of Interaction Between Immunocompetent Cells.	LO6	1 (6)	Discussion of the presentation, preparation of situational tasks on the topic, writing an essay	Assessment by the checklist

	major cytokines (hand-drawn or digital format).					
2.	Lecture. Antigens. Antigen presenting cells. Antibodies. Cellular immune system.	Antigens and Antigen-Presenting Cells, Function of T-Lymphocytes, Antibody Production, Phases of the Immune Response, and Immunological Memory.	LO1	1	Visualization lecture	Feedback questions
	Practical lesson. Specific immune factors. Antigens and antibodies.	Assessment of T- and B-Cell Immunity, Role of Antigen-Presenting Cells, Antibody Avidity, and Indicators of Immunological Status.	LO1 LO2	3	Preparation and protection of a poster report, solution of situational tasks, fulfillment of tasks in the workbook.	Assessment by the checklist
	LIWT/LIW. Applied Significance of Immunoglobulins LIW: 1. Provide specific examples of diseases in which serum immunoglobulin levels are increased or decreased. 2. Write an essay on the topic: "What diseases are treated with immunoglobulin-based drugs?" (150–200 words) 3. Draw a diagram of the structure of immunoglobulins (by hand or in digital format).	Diagnostic and Therapeutic Significance of Immunoglobulins. Clinical Application of Monoclonal Antibodies.	LO6	1 (6)	Discussion of the presentation, preparation of situational tasks on the topic, writing an essay	Assessment by the checklist
3.	Lecture. Immunological Basis of Allergic Reactions. Serological reactions.	Types of Allergic Reactions (Types I–IV) and Their Immunological Mechanisms. Cells and Mediators Involved in Allergy. Autoimmune Reactions and Types of Hypersensitivity. Types of Serological Reactions and Their Application in Immunological Diagnostics.	LO1	1	Thematic	Feedback questions
	Practical lesson. Immunological Basis of Allergic Reactions. Serological reactions.	Clinical and Immunological Differences Between the Main Types of Allergic Reactions. Determination of Immunoglobulin E Levels. Conducting Laboratory Serological Reactions and Interpreting Their Results	LO1 LO2	4	Preparation and protection of a poster report, solution of situational tasks, fulfillment of	Assessment by the checklist

	(Agglutination, Precipitation, ELISA, IFA, etc.). Evaluation of Antigen–Antibody Interaction Reactions Used for Diagnostic Purposes.			tasks in the workbook.	
LIWT/LIW. Clinical Significance of Applied Immunological Methods: Oncology, Infectious Diseases, Genetic Diagnostics Assignments for LIW: 1. Create a table: Immunological Method – Area of Application – Purpose / Diagnostic Value. 2. Choose one immunological method used in oncology and describe its principle and clinical significance (100–150 words). 3. Provide examples of the use of genetic immunodiagnostics and explain its advantages. 4. Create an infographic or a diagram (hand-drawn or digital) showing the sequence of steps in applying applied immunological methods.	Diagnostic and Prognostic Significance of Immunological Methods Used for the Detection of Oncological, Infectious, and Genetic Diseases. Clinical Application of Enzyme-Linked Immunosorbent Assay (ELISA), Polymerase Chain Reaction (PCR), Immunohistochemistry, and Other Methods.	LO6	1 (6)	Discussion of the presentation, preparation of situational tasks on the topic, writing an essay	Assessment by the checklist
4. Lecture. Causative agents of purulent- inflammatory and purulent-septic infections.	Biological Properties of Staphylococci, Streptococci, Meningococci, Gonococci, and Pseudomonads. Morphology of Pathogens, Cultural and Biochemical Characteristics. Main Microbiological Methods for Diagnosing These Infections, Treatment Methods, and Preventive Measures.	LO2	1	Lecture provocation (lecture with planned mistakes)	Feedback questions
Practical lesson. Causative agents of purulent-inflammatory and purulent-septic infections.	Morphological, Cultural, and Biochemical Characteristics of Staphylococcus, Streptococcus, and Pneumococcus Pathogens. Their Pathogenesis and Main Microbiological Diagnostic Methods. Principles of Laboratory Diagnosis and Methods of Specific Prevention.	LO2 LO3 LO4 LO5	3	Preparation and protection of a poster report, performing laboratory work, fulfillment of tasks in the workbook.	Assessment by the checklist

LIWT/LIW. Pathogens of Sexually Transmitted Infections (STIs) Assignments for LIW: 1. Create a table: Disease Name – Pathogen – Morphology – Diagnostic Methods – Treatment Features 2. Choose one STI and describe the pathogenesis of the pathogen and its impact on the body (150–200 words). 3. Write a brief overview of the transmission routes of STI pathogens and preventive measures.	The Main Causative Agents of Sexually Transmitted Infections such as Syphilis, Gonorrhea, and Urogenital Chlamydia. Microbiological and Molecular Diagnostics of These Infections. Modern Treatment Methods and Preventive Measures.	LO6 LO7	2 (6)	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.	Assessment by the checklist
5. Lecture. Pathogenic clostridia. Causative agents of wound infections.	General Characteristics of Pathogenic Anaerobes. Causative Agents of Tetanus, Gas Gangrene, and Botulism: Their Morphology, Toxins, and Biological Properties. Microbiological Diagnostic Methods for These Infections and Specific Preventive Measures.	LO2	1	Review	Feedback questions
Practical lesson. Causative agents of anaerobic infections.	Morphological, Cultural, and Biochemical Characteristics of Anaerobic Pathogens Belonging to the Genus <i>Clostridium</i>. Methods of Cultivation Under Anaerobic Conditions. Principles of Microbiological Diagnosis: Bacterioscopy, Culture, and Biological Toxin Testing. Preventive Measures Against These Pathogens.	LO2 LO3 LO4 LO5	3	Preparation and protection of a poster report, solution of situational tasks, fulfillment of tasks in the workbook.	Assessment by the checklist
LIWT/LIW. Biological features of <i>Pseudomonas aeruginosa</i> and <i>Haemophilus influenzae</i>. Assignments for IWPT/IW: 1. Present a comparative table of morphological, cultural, biochemical, and pathogenic properties of <i>Pseudomonas</i>	Morphological, Cultural, and Biochemical Properties of <i>Pseudomonas aeruginosa</i> and <i>Haemophilus influenzae</i>. Pathogenic Factors and Their Role in the Infectious Process. Microbiological Diagnostic Methods and Features of Antibiotic Susceptibility.	LO6 LO7	1 (6)	Discussion of the presentation, preparation of situational tasks on the topic, writing essays, analysis of scientific articles from scientific	Assessment by the checklist

	<i>aeruginosa</i> and <i>Haemophilus influenzae</i>. 2. Provide a separate description for each pathogen: – Structure, associated diseases, diagnostic methods, treatment. Compare their clinical significance. 3. Draw the appearance of the microorganisms or the characteristic growth on nutrient media (hand-drawn or digital format).			journals Scopus, Web of science (RBL), etc.	
6	Lecture. Causative agents of intestinal infections.	Main Causative Agents of Intestinal Infections: <i>Escherichia</i>, <i>Salmonella</i>, <i>Shigella</i>. Their Morphology, Cultural Properties, and the Pathology They Cause in Humans. Bacteriological Methods Used for the Diagnosis of Acute Intestinal Infections.	LO2	1	Lecture - Feedback questions provocation (lecture with planned mistakes)
	Practical lesson. Causative agents of intestinal infections. Pathogens of acute diarrheal infections. Cholera.	Morphology, Cultural Properties, and Microbiological Diagnosis of the Causative Agents of Escherichiosis, Shigellosis, and Salmonellosis. Pathogenesis of Cholera, Clinical and Epidemiological Features, Principles of Prevention and Treatment of Acute Intestinal Infections.	LO2 LO3 LO4 LO5	3	Preparation and Assessment by the protection of a poster checklist report, performing laboratory work, fulfillment of tasks in the workbook.
	LIWT/LIW. Mid-term №1	The midterm assessment covers the theoretical and practical material of the first module of the discipline.	LO1-7	1 (6)	Midterm Examination Ticket Questions
7.	Lecture. Causative agents of especially dangerous infections.	Morphology, Cultural Properties, and Pathogenesis of the Causative Agents of Cholera, Plague, Anthrax, and Tularemia. Specific Features of Microbiological Methods Used for Diagnosing These Infections.	LO2	1	Consulting lecture
					Feedback questions

Practical lesson. Causative Agents of Zoonotic Infections.	Causative Agents of Plague, Brucellosis, Anthrax, Tularemia, and Ebola Virus. Their Morphology, Cultural Properties, Pathogenesis, and Microbiological Diagnosis. Specific Prevention of These Zoonotic Infections. Characteristics of the Ebola Virus and Methods of Virological Investigation.	LO2 LO3 LO4 LO5	3	Preparation and protection of a poster report, solution of situational tasks, fulfillment of tasks in the workbook.	Assessment by the checklist
LIWT/LIW. West Quarantine and zoonotic infections in Kazakhstan. Assignments for LIW: 1. Create a comparative table on the main quarantine and zoonotic infections registered in Kazakhstan: Pathogen – Transmission Routes – Clinical Manifestations – Preventive Measures 2. Choose one of the infections and provide a brief description (150–200 words): Description of the pathogen, mode of transmission, course of the disease, complications, diagnostics, prevention. 3. Write a brief overview of the epidemiological situation in Kazakhstan and describe regional characteristics of the distribution of these infections. 4. Work with illustration: Draw a diagram of sanitary and epidemiological measures aimed at preventing the spread of the mentioned infections (<i>manually or in electronic format</i>).	Zoonotic and Especially Dangerous Natural-Focal Infections Found in Kazakhstan: Zoonotic Cutaneous Leishmaniasis, Crimean-Congo Hemorrhagic Fever, and Hemorrhagic Fever with Renal Syndrome. Morphology of the Pathogens and Transmission Routes, Natural Reservoirs, Pathogenesis, and the Epidemiological Situation in Kazakhstan. Diagnosis and Preventive Measures.	LO6 LO7	1 (6)	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.	Assessment by the checklist
8. Lecture. Mycoses, pathogenic protozoa.	Pathogenic Fungi Causing Diseases in Humans (<i>Candida</i>, <i>Aspergillus</i>, <i>Trichophyton</i>, <i>Microsporum</i>, etc.): Their Morphology, Pathogenesis, Diagnostic Features, and Treatment. Pathogenic Protozoa: <i>Entamoeba histolytica</i>, <i>Giardia lamblia</i>,	LO2	1	Review	Feedback questions

	<i>Trichomonas vaginalis</i> , <i>Leishmania</i> spp., <i>Toxoplasma gondii</i> – Their Biological Characteristics, Associated Diseases, Transmission Routes, Laboratory Diagnosis, and Preventive Measures.				
Practical lesson. Causative agents of airborne infections.	Morphology, Cultural Properties, Pathogenesis, and Microbiological Diagnosis of the Causative Agents of Tuberculosis, Meningococcal Infection, Diphtheria, and Whooping Cough. The Significance and Application of the “Cough Plate” Method. Specific Prevention of These Diseases (Vaccination, BCG, DTP, etc.).	LO2 LO3 LO4 LO5	3	Preparation and protection of a poster report, performing laboratory work, fulfillment of tasks in the workbook.	Assessment by the checklist
LIWT/LIW. Mycoses, pathogenic protozoa. Assignment for LIW: 1. Create a comparative table of the main types of mycoses and protozoal infections: Pathogen – Transmission Routes – Affected Organs – Diagnostic Methods 2. Describe one mycosis and one protozoal infection: Structure of the pathogen, pathogenesis, clinical manifestations, treatment methods. 3. Conduct a comparative analysis of the similarities and differences between mycoses and protozoal diseases. 4. Prepare a diagram or drawing illustrating the life cycle or the routes of entry of pathogens into the human body (hand-drawn or digital format).	Morphology, Life Cycles, and Laboratory Diagnostic Methods of Pathogenic Fungi and Protozoa. Clinical Features of Skin Mycoses, Mucosal Mycoses, and Systemic Mycoses. Epidemiology of Protozoal Infections and Preventive Measures. Description of Microbiological and Parasitological Research Methods.	LO6 LO7	2 (6)	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.	Assessment by the checklist

9. Lecture. Causative agents of respiratory viral infections.	Causative Agents of Influenza, Parainfluenza, Adenovirus, and Coronavirus Infections. Their Morphology, Antigenic Structure, Classification, Cultural Properties, and Pathogenesis. Features of Respiratory Virus Spread and Possible Complications. Microbiological and Molecular Diagnostic Methods. Specific Prevention and Types of Vaccines.	LO2	1	Conference lecture	Feedback questions
Practical lesson. Herpesviruses.	Main Types of Human Herpesviruses. Their Morphology, Replication Features, Latency Capability, and Cellular Tropism. Characteristics of Clinically Significant Herpesvirus Infections. Diagnostic Methods: ELISA, PCR, Cytology. Fundamentals of Immunoprophylaxis and Antiviral Therapy.	LO2 LO3 LO4 LO5	4	Preparation and protection of a poster report, solution of situational tasks, fulfillment of tasks in the workbook.	Assessment by the checklist
LIWT/LIW. Rickettsioses and Borrelioses Assignment for LIW 1. Create a comparative table showing the morphology of rickettsiae and borreliae, transmission routes, associated diseases, and diagnostic methods. 2. Write a brief description of one rickettsiosis and one borreliosis: Structure of the pathogen, pathogenesis, clinical manifestations, treatment methods. 3. Describe the features of their distribution as natural-focal infections. 4. Prepare a diagram or drawing illustrating laboratory diagnostics or the role of the tick as a vector of infection (hand-drawn or digital format).	Morphology and Biological Characteristics of Rickettsiae and Borreliae, as well as Their Vectors. Causative Agents of Natural-Focal Vector-Borne Infections such as Epidemic and Tick-Borne Typhus, Q Fever, and Lyme Borreliosis. Pathogenesis, Clinical Manifestations, Microbiological and Serological Diagnostic Methods of These Diseases. Epidemiological Significance and Preventive Measures.	LO6 LO7	1 (6)	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.	Assessment by the checklist

10.	Lecture. Human immunodeficiency virus and oncogenic viruses.	Morphology, Genomic Structure, and Replication Features of HIV. Stages of HIV Infection, Clinical Manifestations, and Methods of Specific Diagnosis. Principles of Treatment and Prevention. Characteristics of Oncogenic Viruses. Molecular Mechanisms of Oncogenesis, Virus-Associated Tumors (Cervical Cancer, Burkitt's Lymphoma, Kaposi's Sarcoma, etc.), Screening, and Vaccination.	LO2	1	Problematic	Feedback questions
	Practical lesson. Causative agents of acute respiratory viral infections.	Laboratory Diagnostic Methods for the Causative Agents of Influenza, Parainfluenza, Adenovirus, and Coronavirus Infections. Nasopharyngeal Swab Collection, Media and Systems for Virus Cultivation (Cell Cultures, Chicken Embryo). Rapid Diagnostics Using Enzyme-Linked Immunosorbent Assay (ELISA) and Polymerase Chain Reaction (PCR). Evaluation of Diagnostic Results. Familiarization with Specific Preventive Measures (Vaccines).	LO2 LO3 LO4 LO5	3	Preparation and protection of a poster report, performing laboratory work, fulfillment of tasks in the workbook.	Assessment by the checklist
	LIWT/LIW. Causative agents of neuroviral infections. Assignment for LIW 1. Present a table of the main neurotropic viruses indicating their transmission routes, effects on the nervous system, and diagnostic methods. 2. Choose one neurotropic virus and describe its route of entry into the body, pathogenesis, and clinical manifestations (150–200 words). 3. Prepare a short review on the topic: "The Danger of Viruses"	Problems of rabies prevention. The current state of the problems of tick-borne encephalitis.	LO6 LO7	1 (6)	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.	Assessment by the checklist

Affecting the Nervous System and Preventive Measures."

4. Create a diagram (hand-drawn or digital) showing the pathway of the virus to the central nervous system or its mechanism of spread in the body.

11.	Practical lesson. The causative agents of measles, rubella, chickenpox and mumps.	Morphology, Reproduction Features, and Antigenic Structure of the Causative Agents of Measles, Rubella, Chickenpox, and Mumps. Transmission Routes, Pathogenesis, and Immunity Formation. Laboratory Diagnostic Methods: ELISA, PCR, Serological Reactions. Specific Prevention and Preventive Measures.	LO2 LO3 LO4 LO5	3	Preparation and protection of a poster report, solution of situational tasks, fulfillment of tasks in the workbook.	Assessment by the checklist
	LIWT/LIW. HIV (AIDS). Oncogenic viruses. Assignment for LIW: 1. Create a comparative table of HIV and oncogenic viruses, including: Morphology – Genome – Transmission Routes – Pathogenesis 2. Describe the mechanism of HIV entry into the body, its impact on the immune system, and the stages of AIDS development (150–200 words). 3. Provide examples of the association between oncogenic viruses and cancer, and analyze the importance of prevention and screening. 4. Draw a diagram (hand-drawn or digital) illustrating either: – The effect of HIV on CD4+ cells or – The mechanism of tumor	Stages of HIV Infection, Clinical Signs of Immunodeficiency, and Laboratory Diagnostic Methods. Principles of Antiviral Therapy and Preventive Measures. Impact of Oncogenic Viruses on Tumor Development, Viral Oncoproteins, and the Mechanism of Cellular Transformation. Prevention and Early Detection of Virus-Associated Oncological Diseases.	LO6 LO7	1 (5)	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.	Assessment by the checklist

	cell induction by oncogenic viruses.					
12.	Practical lesson. Causative Agents of Enteroviral and Rotaviral Infections. Viral Hepatitis.	Morphology, Replication Features, Associated Diseases, and Transmission Routes of Enteroviruses (Coxsackie, ECHO, Polioviruses) and Rotaviruses. Structure, Pathogenesis, Modes of Transmission, and Incubation Periods of Viral Hepatitis Pathogens. Laboratory Diagnostic Methods, Prevention, and Vaccination. Overview of the Clinical Features of Enteroviral Infections in Children and Viral Hepatitis in Adults.	LO2 LO3 LO4 LO5	4	Preparation and protection of a poster report, solution of situational tasks, fulfillment of tasks in the workbook.	Assessment by the checklist
	LIWT/LIW. Mid-term №2	The midterm assessment is conducted based on the theoretical and practical material of the second module of the discipline.	LO 1-7	2 (5)	Midterm Examination Ticket Questions	Oral / Written Assessment
Preparation and conduct of intermediate certification				15		
9.	Teaching methods					
9.1	Lectures	Review, visualization lecture, lecture - provocation (lecture with planned mistakes), thematic, conference lecture, consulting lecture, problematic.				
9.2	Practical lessons	Preparation and protection of a poster report, solution of situational tasks, performing laboratory work, fulfillment of tasks in the workbook.				
9.3	SIW/ISWP	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.				
9.4	Mid-term	Assessment of midterm control (Oral / Written answer on ticket questions)				
10.	Evaluation criteria					
10.1.	Criteria for evaluating the learning outcomes of a subject					
	Learning outcomes of the subject "Microbiology and Immunology"	Unsatisfactory	Satisfactory	Good	Excellent	
	LO1 Has knowledge of types and factors of immunity, mechanisms of allergic reactions, principles of immunoprophylaxis and immunotherapy, understands their application in medical practice.	1) Does not have comprehensive knowledge of the main types of immunity and the mechanisms of allergic reactions. 2) Is unable to describe the principles of immunotherapy and	1) Names the types of immunity and main factors. 2) Can describe the general mechanisms of allergic reactions. 3) Understands the basics of immunotherapy and	1) Fully explains the types of immunity and the mechanisms of allergic reactions. 2) Connects the principles of immunotherapy and immunoprophylaxis with specific examples.	1) Clearly classifies and compares all types and factors of immunity. 2) Analyzes the stages of allergic reactions, as well as cellular and humoral mechanisms. 3) Provides a well-reasoned explanation of immunotherapy and immunoprophylaxis in	

	immunoprophylaxis. 3) Does not understand the possibilities of their application in medical practice.	immunoprophylaxis, but does not relate them to specific	3) Correctly identifies aspects of their application in medicine.	relation to clinical practice. 4) Is able to assess complex situations and offer personal recommendations.
LO2 Masters the taxonomy of infectious disease pathogens, their morphological and biological properties, transmission routes and pathogenesis, clinical manifestations, immunity features, laboratory diagnostic methods, as well as specific methods of treatment and prevention.	1) Does not know or confuses taxonomy and morphology of pathogens. 2) Cannot distinguish pathogenesis, immunity, diagnostic, and preventive methods.	1) Names the basic taxonomic classification and morphology of pathogens. 2) Describes pathogenesis in general terms. 3) Provides a limited explanation of diagnostic and preventive methods.	1) Consistently explains the taxonomy, morphology, and biological characteristics of pathogens. 2) Specifies routes of transmission, pathogenesis, and clinical manifestations. 3) Accurately describes types of immunity and laboratory diagnostics. 4) Clearly states specific treatment and prevention methods.	1) Has in-depth knowledge of all pathogen characteristics (taxonomy, morphology, biology). 2) Analyzes the relationship between clinical manifestations and pathogenesis. 3) Compares and reasonably explains the features of immunity formation and laboratory diagnostic methods. 4) Is able to propose specific treatment and prevention methods according to the clinical situation.
LO3 Knows bacteriological, virological, and immunological research methods and is able to interpret their results.	1) Makes mistakes when naming or distinguishing research methods (bacteriological, virological, immunological). 2) Does not interpret or misinterprets research results.	1) Names the main research methods. 2) Can generally explain their purpose. 3) Interprets results at a basic level but does not conduct in-depth analysis.	1) Describes each research method and clearly indicates when it is applied. 2) Links research results to clinical cases. 3) Understands the advantages and limitations of the methods.	1) Compares bacteriological, virological, and immunological methods with a deep understanding of their applications. 2) Accurately analyzes research results and draws well-reasoned conclusions. 3) Competently selects methods for diagnostic purposes and justifies the choice.
LO4 Based on obtained data, provides well-founded recommendations on the use of antibiotics and immunobiological preparations.	1) Does not understand research results or interprets them incorrectly. 2) Cannot provide recommendations on antibiotics or immunobiological drugs.	1) Partially interprets research results. 2) Can name basic antibiotics and immunobiological drugs. 3) Recommendations are inaccurate or not well-founded.	1) Correctly interprets research results. 2) Makes well-reasoned recommendations for drug selection. 3) Knows the specific characteristics of different drugs.	1) Deeply analyzes research data. 2) Provides well-justified therapeutic recommendations, taking into account pathogen sensitivity and immune status. 3) Gives expert evaluations of clinical situations.

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Working curriculum of the discipline «Microbiology and Immunology»		15p. out of 28

LO5 Possesses skills in proper collection of biological material in accordance with clinical requirements and its referral for microbiological investigation.	1) Cannot distinguish between types of biological material. 2) Does not follow the rules for collection and transportation. 3) Does not correctly complete the laboratory referral form.	1) Names types of biological material but makes mistakes. 2) Has limited knowledge of collection procedures and transportation methods. 3) Incompletely fills out the laboratory referral form.	1) Correctly selects biological material and performs basic collection requirements. 2) Follows transportation conditions. 3) Accurately completes the referral form for the microbiological laboratory.	1) Accurately selects biological material according to the clinical situation and collects it at a professional level. 2) Fully observes aseptic techniques, storage, and transportation requirements. 3) Properly and completely fills out referral forms and sends the material to the laboratory in accordance with established guidelines.
LO6 Is able to work with educational, reference, and scientific literature in the field of microbiology and immunology and apply the acquired knowledge in practice.	1) Cannot find or correctly use information sources. 2) Does not know how to analyze scientific materials. 3) Makes clear mistakes when applying knowledge in practice.	1) Can use basic textbooks and reference materials. 2) Partially works with scientific articles. 3) Applies knowledge in practice in a limited way, without full connection to clinical cases.	1) Effectively finds necessary information from various sources. 2) Analyzes scientific articles and draws conclusions. 3) Connects acquired knowledge to clinical situations.	1) Professionally uses scientific, academic, and reference sources. 2) Critically evaluates information and formulates well-founded conclusions. 3) Creatively applies knowledge to specific clinical cases.
LO7 Analyzes and synthesizes acquired knowledge, effectively applying it for professional and scientific self-development	1) Is unable to independently analyze theoretical knowledge. 2) Does not demonstrate a desire for self-development. 3) Does not apply knowledge in scientific and professional activities.	1) Can apply acquired knowledge in specific situations. 2) Shows interest in professional development but lacks a systematic approach. 3) Partially connects knowledge to practice.	1) Analyzes knowledge and uses it to solve specific problems. 2) Plans strategies for self-development in scientific and professional fields. 3) Effectively applies knowledge depending on the situation.	1) Deeply analyzes and synthesizes acquired knowledge at a new level. 2) Constantly engages in scientific inquiry and professional development. 3) Creatively applies knowledge to solve complex practical and academic tasks.

10.2 Assessment methods and criteria

Checklist for practical training

ONTÜSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Department «Microbiology, Virology and Immunology»		50-11-
Working curriculum of the discipline «Microbiology and Immunology»		16p. out of 28

Current control:

№	Criteria for evaluation	Level			
		Excellent	Acceptable	Requires correction	Unacceptable
1	Preparation and protection of the poster report	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. Preparation and protection of the poster report

№	Criteria for evaluation	Points
1	The preparation of the poster and the compilation of the illustration correspond to the topic; the work contains complete, understandable information on the topic; visual aids (tables, diagrams, graphs, etc.) are used in the information; the speaker is fluent in the content, clearly and competently presents the material; the speaker freely and correctly answers questions and comments from the audience; the speaker fits exactly into the framework time limit (7 minutes)	17-20
2	The preparation of the poster and the compilation of the illustration correspond to the topic; the work contains complete, understandable information on the topic; visual aids (tables, diagrams, graphs, etc.) are not used in the information; the speaker is fluent in the content, but cannot clearly and competently present the material; the speaker allowed unprincipled inaccuracies when answering questions and comments from the audience, corrected by the student himself; the speaker tried to keep within the time limit (7 minutes)	15-17
3	The preparation of the poster and the compilation of the illustration correspond to the topic; the work contains complete, but not understandable information on the topic; visual aids (tables, diagrams, graphs, etc.) are not used in the information; the speaker is fluent in the content, but cannot clearly and competently present the material; the speaker, when answering questions and comments from the audience, made fundamental mistakes; the speaker did not meet the time limit (7 minutes)	10-15
4	The preparation of the poster and the compilation of the illustration does not correspond to the topic at all; the work lacks complete, understandable information on the topic; visual aids are not used in the information; the speaker does not know the content at all, cannot clearly and competently present the material; the speaker cannot answer questions and comments from the audience; the speaker generally does not fit into the framework of the regulations (7 minutes)	0-10

ONTÜSTİK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Department «Microbiology, Virology and Immunology»		50-11-
Working curriculum of the discipline «Microbiology and Immunology»		17p. out of 28

2. a) Solution of situational problems

№	Criteria for evaluation	Points
1	The learner showed original thinking, showed a deep knowledge of the material, used the scientific achievements of other disciplines when answering. Used scientific terminology.	26-30
2	Actively participated in the work, showed knowledge of the material, made minor inaccuracies or fundamental errors corrected by the learner himself	20-26
3	When working in a group, he was passive, made inaccuracies and unprincipled mistakes, and experienced great difficulties in systematizing the material.	15-20
4	He did not take part in the work of the group, answering the questions of the teacher, made fundamental mistakes and inaccuracies, did not use scientific terminology when answering.	0-15

b) Performing laboratory work

№	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

№	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 mistake and one defect. Allowed no more than two shortcomings.	35-46
3	The learner correctly completed at least half of the work and made: no more than 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.	25-34
4	The learner made the number of errors (shortcomings) exceeding the norm. Didn't start work. Correctly completed no more than 10% of all tasks	0-24

As a rule, several forms of knowledge control are used in the classroom.

The average score is given to the magazine.

ONTÜSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Department «Microbiology, Virology and Immunology»		50-11-
Working curriculum of the discipline «Microbiology and Immunology»		18p. out of 28

Checklist for LIWT

Form of control	Grade		Evaluation criteria
Presentation	Great	A+ (4, 0; 95-100%)	25+ slides, 7+ sources, complete content, highly visual, confident and error-free defense.
		A- (3, 67 ; 90-94%)	~25 slides, 6–7 sources, complete material, minor errors corrected by the student.
	Fine	B+ (3.33;85-89%)	23-24 slides, 6 sources, some minor errors.
		B (3.0; 80-84 %)	22–23 slides, the material is sufficient, but there is a lack of consistency.
		B- (2.67; 75-79%)	21-22 slides, weak argumentation.
		C+ (2.33;70-74%)	20–21 slides, 5 sources, weak content, student gets confused during defense.
	Satisfactorily	C (2.0;65-69%)	19-20 slides, content is incomplete.
		C- (1.67;60-64%)	18–19 slides, not enough clarity, no system.
		D+ (1.33 ;5 5 -5 9 %)	15-17 slides, lots of mistakes.
		D (1.0; 50-54 %)	12-15 slides, main content not covered.
	Unsatisfactorily	FX (0.5; 2 5 -49%)	5–10 slides, <5 sources, serious errors during defense.
		F (0; 0- 2 4%)	The work is not completed or does not meet the requirements.

Form control	Grade		Evaluation criteria
Essay	Great	A+ (4, 0; 95-100%)	The topic is fully covered, logically, reasoned, there are no errors, the conclusion corresponds to the content.
		A- (3, 67 ; 90-94%)	The content is complete, 1-2 inaccuracies.
	Fine	B+ (3.33;85-89%)	The topic is covered, but the argumentation is insufficient.
		B (3.0; 80-84 %)	The material is clear, but the structure is weak.
		B- (2.67; 75-79%)	The arguments are superficial.
		C+ (2.33;70-74%)	The topic is partially covered, there are errors.
	Satisfactorily	C (2.0;65-69%)	The logic of the presentation is weak.
		C- (1.67;60-64%)	The conclusion does not fully correspond to the main part.

		D+ (1.33 ;5 5 -5 9 %)	The answer is one-sided, there are many mistakes.
		D (1.0; 50-54 %)	A big deviation from the topic.
	Unsatisfactory	FX (0.5; 2 5 -49%)	The topic is not covered, there are many speech errors.
		F (0; 0- 2 4%)	The essay is not completed.

Form control	Grade		Evaluation criteria
Drawing up situational problems	Great	A+ (4 , 0; 95-100%)	The material is deep, the terminology is correct, and there are interdisciplinary connections.
		A- (3, 67 ; 90-94%)	Complete answer, minor inaccuracies.
	Fine	B+ (3.33;85-89%)	The main content is correct, there are minor errors.
		B (3.0; 80-84 %)	The answer is correct, but there is little analysis.
		B- (2.67; 75-79%)	The material is incomplete and lacks systematicity.
		C+ (2.33;70-74%)	There are some inaccuracies, but the main points are reflected.
		Satisfactorily	C (2.0;65-69%)
	C- (1.67;60-64%)		The logic is weak, the material is not systematic.
	D+ (1.33 ;5 5 -5 9 %)		Many errors, main content not revealed.
	D (1.0; 50-54 %)		Symptoms and data are given incorrectly.
Unsatisfactory	FX (0.5; 2 5 -49%)	Gross fundamental errors.	
	F (0; 0- 2 4%)	The task was not completed.	

Form control	Grade		Evaluation criteria
Analysis of scientific articles	Great	A+ (4 , 0; 95-100%)	5+ pages, articles from the last 5 years, high impact factor, full references, reliable protection.
		A- (3, 67 ; 90-94%)	The work is complete, the arguments are sufficient, there are minor errors.
	Fine	B+ (3.33;85-89%)	4+ pages, new articles, but weak argumentation.
		B (3.0; 80-84 %)	The work is good, but not systematic.
		B- (2.67; 75-79%)	Links are partially missing, the analysis is superficial.
		C+ (2.33;70-74%)	3+ pages, articles with average impact factor.

		(2.33;70-74%)	
	Satisfactorily	WITH (2.0;65-69%)	The argumentation is weak, the defense is difficult.
		WITH- (1.67;60-64%)	Errors in links, material is fragmentary.
		D+ (1.33 ;5 5 -5 9 %)	The work is incomplete.
		D (1.0; 50-54 %)	Basic requirements are not met.
	Unsatisfactory	FX (0.5; 2 5 -49%)	Less than 3 pages, old articles, gross errors.
		F (0; 0- 2 4%)	The work is not done.

Checklist of intermediate certification

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%)	1) the content of the ticket material is disclosed in full; 2) the material is presented correctly, in a certain logical sequence, terminology is accurately used; 3) the ability to illustrate theoretical positions with concrete examples, to apply them in a new situation is shown; 4) the answer is independent, without leading questions; 5) one or two inaccuracies were made when covering minor issues, which are corrected after comments or leading questions.
	Good 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; 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%) D+ (1,33;55-59%) D(1,0; 50-54%)	1) 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; 2) there were difficulties or mistakes were made in the definition of concepts, the use of terminology, corrected after several leading questions; 3) 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

Unsatisfactory
FX (0,5; 25-49%)
F (0; 0-24%)

- 1) the main content of the educational material is not disclosed;
- 2) ignorance or misunderstanding of the most or most important part of the educational material is revealed;
- 3) errors were made in the definition of concepts, when using terminology, which were not corrected after several leading questions.
- 4) the answer to the question is completely absent.
- 5) refusal to answer.

ONTUSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ	 SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
Department «Microbiology, Virology and Immunology»	50-11-
Working curriculum of the discipline «Microbiology and Immunology»	22p. out of 28

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.

Criteria for evaluating student responses	Number of points for each 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 essence of the question posed, giving an answer in relation to any term and general concept due to the examiner's leading question	7	7	10
The learner, answering the question of the ticket, is poorly oriented in the compulsory literature, makes gross mistakes in covering fundamental, key issues	15	15	20
When answering, the student needs additional questions, makes mistakes in the interpretation of individual, non-key points	20	20	25
The Learner competently answers the question within the framework of the mandatory literature, minor single inaccuracies are possible	25	25	30
The learner answers the question correctly, fully, uses additional literature	30	30	40
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 points	Percentage	Assessment according to the traditional system
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	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 Resources

Electronic resources, including but not limited to: databases, animations, simulators, professional blogs, websites, and other electronic reference materials (such as videos, audio recordings, digests).	Library Information Center electronic resources 1. Электронная библиотека ЮКМА - https://e-lib.skma.edu.kz/genres 2. Республиканская межвузовская электронная библиотека (РМЭБ) http://rmebrk.kz/ 3. Цифровая библиотека «Aknurpress» - https://www.aknurpress.kz/ 4. Электронная библиотека «Эпиграф» - http://www.elib.kz/ 5. Эпиграф - портал мультимедийных учебников https://mbook.kz/ru/index/ 6. ЭБС IPR SMART https://www.iprbookshop.ru/auth 7. информационно-правовая система «Заң» - https://zan.kz/ru 8. Medline Ultimate EBSCO 9. eBook Medical Collection EBSCO 10. Scopus - https://www.scopus.com/
Electronic resources	1. Микробиология және вирусология негіздері/ Изимова Р. https://mbook.kz/ru/index_brief/434/ 2. Основы микробиологии и вирусологии/ Успабаева А.А. https://mbook.kz/ru/index_brief/253/ 3. Алимжанова, Ғ. Т. Жеке микробиология. 1-2 бөлім [Электронный ресурс] : оқу құралы. - Электрон. текстовые дан. (60.9Мб). - Алматы : Эверо, 2016. - 380 бет. эл. опт. диск (CD-ROM). 4. Микробиология пәні бойынша лабораториялық жұмыстар.НарымбетоваҰ.М. , 2016 https://www.aknurpress.kz/reader/web/1751 5. Медициналық микробиология. 1-том.Арықпаева Ұ.Т., Саржанова А.Н., Нуриев Э.Х. , 2019 https://www.aknurpress.kz/reader/web/1334 6. Медициналық микробиология. 2-том.Арықпаева Ұ.Т., Саржанова А.Н., Нуриев Э.Х. , 2019 https://www.aknurpress.kz/reader/web/1334 7. Иммунология : Оқу-әдістемелік құрал. / Г.А. Абдукадирова, Д.Т. Исакова ,Х.А. Мусаев, С.Ж. Абдуова. - Жетісай: "Сырдария" университеті, 2015. - 152 б. https://rmebrk.kz/book/1151719 8. Бияшев, К.Б., Бияшев, Б.К. Ветеринарная микробиология и иммунология : Учебник. . - 2-е изд. - Алматы, 2014. - 417 с. https://rmebrk.kz/book/1004605 9. Бахитова Р.А. Микробиология, вирусология пәнінен дәрістер жинағы. Оқу құралы Алматы: Эверо, - 2020 https://www.elib.kz/ru/search/read_book/87/ 10. Санитарлық микробиология: оқу-әдістемелік нұсқауы Алматы – 2020 https://www.elib.kz/ru/search/read_book/30/ 11. Микробиология, вирусология пәнінен дәрістер жинағы. Оқуқұралы Дайындаған: Бахитова Р.А. Алматы: Эверо, - 2020. – 156 б. https://www.elib.kz/ru/search/read_book/87/ 12. Жалпы микробиология. Оқу әдістемелік құрал./ РахимжановаБ.К., Кайраханова Ы.О. – Алматы, Эверо, 2020. -76 б. https://www.elib.kz/ru/search/read_book/3140/ 13. Клиникалық микробиология – 1-ші басылым, 124 бет. Алматы, 2020. Эверо баспасы. https://www.elib.kz/ru/search/read_book/49/ 14. Микробиология, вирусология пәнінен дәрістер жинағы. Оқуқұралы Дайындаған: Бахитова Р.А. Алматы: Эверо, - 2020. – 156 б. https://www.elib.kz/ru/search/read_book/87/

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12. Politics of discipline

- Mandatory attendance of lectures and practical classes according 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;
- 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: $ORC \text{ avg} \times 0.2 + OTC \text{ avg} \times 0.4$

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.

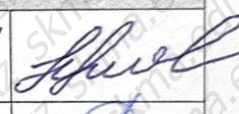
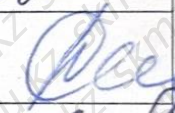
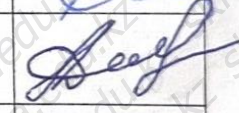
During testing, the teacher is asked 50 questions.

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%. $90 \times 0.4 = 36$ 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) = $ORC \text{ cf} \times 0.2 + OTC \text{ cf} \times 0.4 + IC \times 0.4$

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

14. Approval and Revision			
Date of approval with the Library and Information Center	Protocol № 7 25.06.2025	Head o LIC: Darbicheva R.I.	
Date of approval at the department	Protocol № 11a 26.06.2025	Head of Department: Seitkhanova B.T.	
Date of approval by the Academic Committee of the Educational Program	Protocol № 6 27.06.2025	Chair of the AC: Auezhankyzy D.	
Date of revision at the department	Protocol №	Head of Department: Seitkhanova B.T.	
Date of revision at the Academic Committee of the Educational Program	Protocol №	Chair of the AC: Auezhankyzy D.	

