**Syllabus**

**Working programme of the discipline " General pathology"**
**Educational program 6B 10117 "Dentistry"**

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| **1.** | **General information about the discipline** | | |
| 1.1 | **Course code:** GP 3220 | 1.6 | **Academic year:** 2025-2026 |
| 1.2 | **Name of the discipline:** General Pathology | 1.7 | **Course:** 3 |
| 1.3 | **Prerequisites:** Locomotor apparatus and skin at norm, the nervous system and sensory organs of vision at norm, the cardiorespiratory system at norm, the digestive and endocrine systems at norml, the genitourinary system at norm, the blood or lymph at norm. | 1.8 | **Semester** : 5 |
| 1.4 | **Postrequisites:** Musculoskeletal system and skin in pathology, nervous system and sensory organs of vision in pathology, cardiorespiratory system in pathology, digestive and endocrine systems in pathology, genitourinary system in pathology, blood or lymph in pathology | 1.9 | **Number of credits (ECTS)**: 6 (180) |
| 1.5 | **Cycle:** BD | 1.10 | **Component** : IC |

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| **2.** | **Description of the discipline** |
| The formation of fundamental knowledge about the patterns of development of general pathological processes and the development of skills in pathophysiological analysis of clinical and laboratory data, description of macro- and micropreparations, the study of the concepts of etiopathogenesis, morphogenesis, morphology and disease outcomes allows to integrate this knowledge into practical activities, ensuring high-quality care and analysis of treatment effectiveness. | |

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| **3.** | **Summative Assessment Form** | | |
| 3.1 | ☑ MCQ testing | 3.5 | Coursework |
| 3.2 | Writing | 3.6 | Essay |
| 3.3 | Oral | 3.7 | Project |
| 3.4 | ☑ OSPE/OSCE or practical skills assessment | 3.8 | Other (specify) |

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| **4.** | **Objectives of the discipline** |
| Formation of a holistic understanding of the mechanisms of development of general pathological processes based on the study of issues of general nosology, the concept of pre-disease, disease, their stages, general etiology, pathogenesis and morphogenesis of pathological processes. Formation of clinical thinking skills based on the application of knowledge of pathophysiological mechanisms of the course, pathoanatomical changes, complications and outcomes of general pathological processes developing in various diseases. | |

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| **5.** | **Final learning outcomes (LO of the discipline)** | |
| LO 1 | Demonstrates knowledge of general pathology, understanding of the patterns of development of changes in cells and tissues in various pathological conditions. | |
| LO 2 | Explains the etiology, pathogenesis, and morphogenesis of general pathological processes. | |
| LO3 | Determines pathological changes and functional disorders at the organ, tissue and cellular levels, describes macro- and micropreparations and analyzes the results of clinical laboratory and experimental studies. | |
| LO4 | Makes conclusions on macro- and micropreparations, as well as on the results of clinical laboratory and experimental studies, and predicts the outcomes of pathological changes in organs and tissues during general pathological processes when solving cases. | |
| 5.1 | **LO of the discipline** | **Learning outcomes of the GP, which are associated with the discipline LO** |
| | LO 1 | LO 1. Demonstrate and apply knowledge and skills in the field of biomedical, clinical, epidemiological, socio-behavioral sciences that contribute to the formation of a versatile personality with a broad outlook and a culture of thinking. |

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| | LO 2<br>LO 3<br>LO 4 | LO 2. Analyze the patterns of growth and development, the structure of the body in normal and pathological conditions, to understand the mechanisms of development of stomatolgic diseases.<br>LO5 . Conduct a clinical examination of the patient using modern instrumental, laboratory and functional research methods, interpretation of the data obtained for making a dental diagnosis, prescribing treatment and prevention of dental diseases |

## 6. Detailed information about the discipline

6.1 Venue : SKMA, Department of Pathology and Forensic Medicine : Shymkent, Al-Farabi sq. , 3, Academic Building No. 2, 4th floor; audiences – No. 404 a, b; No. 406; No. 408; No. 409, No. 411a, b. e-mail: Patan.gisto@mail.ru

| 6.2 | Number of hours | Lectures | Practical classes | Lab. | SIWT | SIW |
|---|---|---|---|---|---|---|
| | | 12 | 48 | | 12 | 68 |

6.3 Study plan for the discipline

| Days / Form of the lesson | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pathological physiology (3 cr.) | Lec | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | | | | **6** |
| | Practical | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 4 | | 2 | **24** |
| | SIWT | 1 | | 1 | | 2 | | 1 RK No. 1 | | 1 | | 1 | | 1 | | 1 | **9** |
| | SIW | 6 | | 6 | | 5 | | 6 | | 5 | | 6 | | | | 2 | 42+9(PA) =51 |
| pathological anatomy (3 cr.) | Lec | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | | | 6 |
| | Practical | | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 4 | 2 | 24 |
| | SIWT | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | 1 RK No. 2 | 9 |
| | SIW | | 6 | | 5 | | 6 | | 6 | | 6 | | 6 | | 5 | 3 | 42+9(PA) =51 |

## 7. Information about teachers

| No. | Full name | Degrees and Position | Email address |
|---|---|---|---|
| 1 | Sadykova Aliya Shamilevna | Doctor of Medical Sciences, Acting Professor | aliya.sadykova.66@mail.ru |
| 2 | Bisimbaeva Saule Babatovna | PhD, Acting Docent | Bisimbaeva@inbox.ru |
| 3 | Dosybaev Bakhytzhan Krykbaevich | PhD, Acting Docent | Krik85@mail.ru |
| 4 | Khodzhaev Nurlan Kenzhetureevich | PhD, Acting Docent | nkkhoja@mail.ru |
| 5 | Kulbalieva Zhannat Zhakslikovna | PhD, Acting Docent | zhann_7@mail.ru |
| 6 | Sedykh Egor Pavlovich | PhD, Acting Docent | egorsedykh1986@mail.ru |
| 7 | Kerimov Rassim Azatovich | Master, Senior teacher | Kir-2004@list.ru |
| 8 | Abildina Kalamkas Berzhanovna | Master, Assistant | Mskas1972@mail.ru |
| 9 | Ignatieva Anastasia Sergeevna | Senior teacher | Zhelonkina_88@mail.ru |
| 10 | Berdalieva Gulmira Bakhytkyzy | Senior teacher | Mira-3505@mail.ru |
| 11 | Kurymbaeva Ainur Rashidkyzy | Assistant | Smp_zoj@mail.ru |
| 12 | Seidakbar Aisana Usenovna | Teacher | aseydakbar@mail.ru |
| 13 | Duysembieva Zhazira Mereykyzy | Teacher | zhazira0508@mail.ru |

## 8. Thematic plan

| Day | Form of the lesson | Topic Title | Summary | LO Of the modul | Number of hours | Forms/ methods/ learning technologies | Forms/ evaluation methods |
|---|---|---|---|---|---|---|---|
| 1 | Pathological physiology. Lecture 1 | Subject, tasks and methods of pathological physiology. General | Subject, tasks and methods of pathological physiology. General nosology. Disease, concept, stages. Pre- disease , concept. General etiology and | LO1 | 1 | Overview | Quick poll Feedback |

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| | | nosology. General etiology and pathogenesis | pathogenesis. Etiological factors, types. Main link in pathogenesis. Clinical significance | | | | |
| | Pathological physiology. Practical lesson 1 | Subject, tasks and methods of pathological physiology. General nosology. General etiology and pathogenesis | Subject, tasks and methods of pathological physiology. General nosology. Disease, concept, stages. Pre -disease, concept. General etiology and pathogenesis. Etiological factors , types. Main link of pathogenesis. Clinical significance | LO2 LO3 LO4 | 3 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |
| | Pathological physiology. SIWT/SIW 1 | The role of reactivity and heredity in pathology | Reactivity and resistance, concept, types, forms. Factors determining reactivity. Mutations. Classification of hereditary pathology. Etiology and pathogenesis of gene and chromosomal diseases. Clinical significance | LO2 LO3 LO4 | 1/6 | C ase - study | Case Solution Checklist |
| 2 | Pathological anatomy. Lecture 1 | Dystrophies | Subject, goals, objectives, objects, methods and levels of pathological anatomy research. Autopsy. Biopsy. Experiment . Alteration. Dystrophies. Classification. Parenchymatous protein, fat, carbohydrate dystrophies. Clinical significance | LO1 | 1 | Overview | Quick poll Feedback |
| | Pathological anatomy. Practical lesson 1 | Metabolic disorders | Dystrophies. Classification. Parenchymatous protein, fat, carbohydrate dystrophies. Etiology, pathogenesis, morphogenesis, pathological anatomy. Outcome. Clinical significance | LO2 LO3 LO4 | 3 | Discussion of the topic, description of macro- and micropreparations with a conclusion , case study | Checklist descriptions of macro- and micropreparations, case solution checklist |
| | Pathological anatomy . SIWT/SIW 1 | Cell pathology | Cell pathology. Pathology of the nucleus, cytoplasm, cell membranes. Types of pathologically altered cells. Examples. Participation in conducting autopsies at a clinical site | LO2 LO3 LO4 | 1/6 | C ase - study | Case Solution Checklist |
| 3 | Pathological physiology. Lecture 2 | Cell pathology | Cell damage, concept, types, causes, mechanisms. Free radical lipid peroxidation. Mechanisms of cell protection and adaptation during damage. Antioxidant systems . Clinical significance | LO1 | 1 | Overview | Quick poll |

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|---|---|---|---|---|---|---|---|
| 4 | Pathological physiology. Practical lesson 2 | Cell pathology | Cell damage, concept, types, causes, mechanisms. Free radical lipid peroxidation. Mechanisms of cell protection and adaptation during damage. Antioxidant systems . Clinical significance | LO2 LO3 LO4 | 3 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |
| | Pathological physiology. SIWT/SIW 2 | General body reactions to damage. Disorders of acid-base balance | Stress, concept, stages. "Selye's triad". Shock, concept, stages, types. Coma, concept, types, leading links of pathogenesis. Classification of disorders of acid-base state (KOS). Acidosis and alkalosis, types, causes, clinical and laboratory manifestations, mechanisms of compensation, clinical significance. Disorders of KOS in the conditions of development of pathology of the oral cavity | LO2 LO3 LO4 | 1/6 | C ase - study | Case Solution Checklist |
| | Pathological anatomy. Lecture 2 | Blood circulation disorders | Arterial and venous congestion, changes in the oral cavity in case of chronic venous congestion. Hemorrhage, hemorrhage. Thrombosis and embolism. Etiology, pathogenesis, morphogenesis, pathological anatomy. Outcome. Clinical significance | LO1 | 1 | Overview | Quick poll Feedback |
| | Pathological anatomy. Practical lesson 2 | Blood circulation disorders | Arterial and venous congestion, changes in the oral cavity in case of chronic venous congestion. Hemorrhage, hemorrhage. Thrombosis and embolism. Etiology, pathogenesis, morphogenesis, pathological anatomy. Outcome. Clinical significance | LO2 LO3 LO4 | 3 | Discussion of the topic, description of macro- and micropreparations with a conclusion , case study | Checklist descriptions of macro- and micropreparations , case solution checklist |
| | Pathological anatomy . SIWT/SIW 2 | Blood circulation disorders | DIC syndrome. Shock. Etiology, pathogenesis, morphogenesis, and pathological anatomy. Outcome. Clinical significance | LO2 LO3 LO4 | 1/5 | C ase - study | Case Solution Checklist |
| 5 | Pathological physiology. Lecture 3 | Disorders of water and electrolyte balance | Water balance, types. Dehydration, concept, types, causes, development mechanisms. Hyperhydration, concept, types, causes, | LO1 | 1 | Overview | Quick poll Feedback |

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| | | | development mechanisms. Edema and dropsy, concept, types, pathogenetic factors . Clinical significance | | | | |
| | Pathological physiology. Practical lesson 3 | Disorders of water and electrolyte balance | Water balance, types. Dehydration, concept, types, causes, development mechanisms. Hyperhydration, concept, types, causes, development mechanisms. Edema and dropsy, concept, types, pathogenetic factors . Clinical significance | LO2 LO3 LO4 | 3 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |
| | Pathological physiology. SIWT/SIW 3 | Typical metabolic disorders | Disorders of carbohydrate, lipid, protein, mineral, and vitamin metabolism. Hypo- and hyperglycemia, types, and causes. Changes in the tissues of the dentition and oral cavity in diabetes mellitus. Hyperlipemia. Obesity, causes, and types. Hypo- and hyperproteinemia, causes of development. Disorders of macro- and micronutrient metabolism. Hypo- and hypervitaminosis. Clinical significance | LO2 LO3 LO4 | 2/5 | C ase - study | Case Solution Checklist |
| 6 | Pathological anatomy . Lecture 3 | Inflammation | Exudative and proliferative inflammation. Etiology, pathogenesis, morphogenesis, and pathological anatomy. Outcome. Clinical significance | LO1 | 1 | Overview | Quick poll Feedback |
| | Pathological anatomy . Practical lesson 3 | Inflammation | Fibrinous, catarrhal, serous, purulent, putrefactive, and hemorrhagic inflammation. Influenza, meningococcal infection. Productive inflammation. Morphological characteristics of granulomas in syphilis, tuberculosis, rhinoscleroma, leprosy, and actinomycosis. Etiology, pathogenesis, morphogenesis, and pathological anatomy. Outcome. Clinical significance | LO2 LO3 LO4 | 3 | Discussion of the topic, description of macro- and micropreparations with a conclusion , case study | Checklist descriptions of macro- and micropreparations , case solution checklist |
| | Pathological anatomy . SIWT / SIW 3 | Inflammation | Sepsis. Odontogenic sepsis. Etiology, pathogenesis, morphogenesis, pathological anatomy. Outcome. Clinical significance. | LO2 LO3 LO4 | 1/6 | C ase - study | Case Solution Checklist |

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| 7 | Pathological physiology. Lecture 4 | Hypoxia. Disturbances of peripheral blood circulation | Hypoxia, concept, types, etiology, pathogenesis, compensatory reactions. Disruptions of the oxyhemoglobin dissociation curve. Disorders of peripheral circulation, their role in the pathogenesis of oral diseases. Arterial hyperemia, venous hyperemia, ischemia, stasis, thrombosis and embolism, concept, causes, mechanisms of development, symptoms, consequences. Clinical significance | LO1 | 1 | Overview | Quick poll |
| | Pathological physiology. Practical lesson 4 | Hypoxia. Disturbances of peripheral blood circulation | Hypoxia, concept, types, etiology, pathogenesis, compensatory reactions. Disruptions of the oxyhemoglobin dissociation curve. Disorders of peripheral circulation, their role in the pathogenesis of oral diseases. Arterial hyperemia, venous hyperemia, ischemia, stasis, thrombosis and embolism, concept, causes, mechanisms of development, symptoms, consequences. Clinical significance | LO2 LO3 LO4 | 3 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |
| | Pathological physiology. SIWT / SIW 4 | Midterm Examination 1 | Topics of lectures, practical classes, independent work, covered during 1-5 days of training | LO1 LO2 LO3 LO4 | 1/6 | Integrated control of educational achievements using control educational cases, testing | Checklist case solutions , testing checklist |
| 8 | Pathological anatomy . Lecture 4 | Necrosis | Necrosis. Mechanism of development and classification of necrosis. Microscopic signs of necrosis. Caries. Etiology. Pathogenesis. Pathological anatomy. Complications. Clinical significance | LO1 | 1 | Overview | Quick poll Feedback |
| | Pathological anatomy . Practical lesson 4 | Necrosis | Necrosis. Mechanism of development and classification of necrosis. Microscopic signs of necrosis. Caries. Etiology. Pathogenesis. Pathological anatomy. Complications. Clinical significance. | LO2 LO3 LO4 | 3 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |

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| | Pathological anatomy . SIWT / SIW 5 | Adaptation and adjustment processes. Regeneration | Adaptation and adjustment processes. Regeneration. Etiology, pathogenesis, morphogenesis. Macro- and microscopic features. Clinical significance. | LO2 LO3 LO4 | 1/6 | C ase - study | Case Solution Checklist |
| 9 | Pathological physiology. Lecture 5 | Inflammation | Inflammation: concept, etiology, pathogenesis, types, course, outcomes, manifestations. Alteration and inflammatory mediators. Microcirculation disorders at the site of inflammation. Leukocyte exudation and emigration, mechanisms. Proliferation. Clinical significance. Characteristics of the course of inflammatory processes in the maxillofacial region. | LO1 | 1 | Overview | Quick poll Feedback |
| | Pathological physiology. Practical lesson5 | Inflammation | Inflammation: concept, etiology, pathogenesis, types, course, outcomes, manifestations. Alteration and inflammatory mediators. Microcirculation disorders at the site of inflammation. Leukocyte exudation and emigration, mechanisms. Proliferation. Clinical significance. Characteristics of the course of inflammatory processes in the maxillofacial region. | LO2 LO3 LO4 | 3 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |
| | Pathological physiology. SIWT / SIW 5 | Pathophysiology of the infectious process Fever | Infectious process, concept, causes, and development mechanisms. Sepsis, concept, types. Fever, concept, etiology, pathogenesis, stages, types, and significance. Metabolism and organ function during fever. Distinguishing fever from hyperthermia. Clinical significance. | LO2 LO3 LO4 | 1/5 | Case - study | Case Solution Checklist |
| 10 | Pathological anatomy . Lecture 5 | Cardiovascular pathology | Atherosclerosis. Arterial hypertension. Etiology, pathogenesis, morphogenesis, pathological anatomy. Causes of death. Clinical significance. | LO1 | 1 | Overview | Quick poll Feedback |

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| | Pathological anatomy . Practical lesson 5 | Cardiovascular pathology | Arterial hypertension. Hypertensive crisis, atherosclerosis of the aorta, coronary arteries of the heart and brain. Ischemic and hemorrhagic cerebral infarction. Ischemic heart disease, myocardial infarction. Etiology, pathogenesis, morphogenesis, pathological anatomy. Complications. Causes of death. Clinical significance. | LO2 LO3 LO4 | 3 | Discussion of the topic, description of macro- and micropreparations with a conclusion , case study | Checklist descriptions of macro- and micropreparations , case solution checklist |
| | Pathological anatomy . SIWT / SIW 5 | Immunopathological processes | Congenital and acquired immunodeficiency syndromes. Hypersensitivity reactions. Nonspecific lymphadenitis. Classification, etiology, morphogenetic mechanisms, morphological characteristics. Outcome. Clinical significance. | LO2 LO3 LO4 | 2/5 | C ase - study | Case Solution Checklist |
| 11 | Pathological physiology. Lecture 6 | Immunopathological processes | Allergy: concept and etiology. Types of allergens. Sensitization. Classification and general pathogenesis of allergic reactions. Pathogenesis of allergic reactions of types I, II, III, and IV. Clinical significance. The role of allergy in the pathogenesis of periodontal diseases, oral mucosa, and salivary glands. The mechanism of anaphylactic shock in dental practice. | LO1 | 1 | Overview | Quick poll Feedback |
| | Pathological physiology. Practical lesson 6 | Immunopathological processes | Allergy: concept and etiology. Types of allergens. Sensitization. Classification and general pathogenesis of allergic reactions. Pathogenesis of allergic reactions of types I, II, III, and IV. Clinical significance. The role of allergy in the pathogenesis of periodontal diseases, oral mucosa, and salivary glands. The mechanism of anaphylactic shock in dental practice. | LO2 LO3 LO4 | 3 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |

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| | Pathological physiology. SIWT / SIW 5 | Immunopathological processes | Immunodeficiency disorders: concept, types, mechanisms of development, and manifestations. AIDS: etiopathogenesis, stages, and manifestations. Autoimmune process: concept, stages of development, and clinical significance. | LO2 LO3 LO4 | 1/6 | C ase - study | Case Solution Checklist |
| 12 | Pathological anatomy . Lecture 6 | Pathology of inflammatory diseases of the respiratory system | Bronchitis. Pneumonia. Bronchiectasis. Etiology, pathogenesis, morphogenesis, pathological anatomy. Complications. Causes of death. Clinical significance | LO1 | 1 | Overview | Quick poll |
| | Pathological anatomy . Practical lesson 6 | Pathology of inflammatory diseases of the respiratory system | Bronchitis. Pneumonia. Bronchiectasis. Etiology, pathogenesis, morphogenesis, pathological anatomy. Complications. Causes of death. Clinical significance | LO2 LO3 LO4 | 3 | Discussion of the topic, description of macro- and micropreparations with a conclusion , case study | Checklist descriptions of macro- and micropreparations , case solution checklist |
| | Pathological anatomy . SIWT / SIW 6 | Pathology of the gastrointestinal tract | Chronic gastritis. Chronic peptic ulcer disease. Etiology, pathogenesis, morphogenesis, pathological anatomy. Complications. Causes of death. Clinical significance. | LO2 LO3 LO4 | 1/6 | C ase - study | Case Solution Checklist |
| 13 | Pathological physiology. Practical lesson 7 | Anemia. Leukocytosis | Anemias, classification, etiopathogenesis, and manifestations. Posthemorrhagic, hemolytic, and dyserythropoietic anemias, characteristics, and changes in the hemogram. Qualitative changes in red blood cells in anemia. Leukocytosis: concept, types, causes, mechanisms of development, and manifestations. Changes in the white blood cell count. Clinical significance. | LO2 LO3 LO4 | 4 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |

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| | Pathological physiology. SIWT / SIW 7 | Leukopenia | Leukopenia: concept, types, pathogenesis. Clinical significance | LO2 LO3 LO4 | 1/6 | C ase – study | Case Solution Checklist |
| 14 | Pathological anatomy . Practical lesson 7 | Pathology of the oral cavity | Dental and periodontal diseases. Sialoadenitis. Periostitis. Odontogenic cysts. Etiology, pathogenesis, morphogenesis, pathological anatomy. Complications. Causes of death. Clinical significance. | LO2 LO3 LO4 | 4 | Discussion of the topic, description of macro- and micropreparations with a conclusion , case study | Checklist descriptions of macro- and micropreparations , case solution checklist |
| | Pathological anatomy . SIWT / SIW 6 | Pathology of the liver and biliary tract | Cholecystitis. Gallstones. Infectious and alcoholic hepatitis. Toxic liver dystrophy. Liver cirrhosis. Etiology, pathogenesis, morphogenesis, pathological anatomy. Complications. Causes of death. Clinical significance. | LO2 LO3 LO4 | 1/5 | C ase - study | Case Solution Checklist |
| 15 | Pathological physiology. Practical lesson 8 | Tumors | Tumors: concept, types, and etiology. Etiological features of maxillofacial tumors. Tumor pathogenesis. Paraneoplastic syndromes: concept and manifestations. Cancer cachexia: concept and pathogenesis. Mechanisms of antitumor resistance. Clinical significance. | LO2 LO3 LO4 | 2 | Work in small groups, discussion of the topic, case - study | Checklist for working in small groups, topic discussion checklist, case solution checklist |
| | Pathological physiology. SIWT / SIW 8 | Leukemia | Leukemia: concept, etiopathogenesis, classification, main clinical syndromes, changes in the hemogram and myelogram. Clinical significance | LO2 LO3 LO4 | 1/2 | C ase - study | Case Solution Checklist |
| | Pathological anatomy . Practical lesson 8 | Tumors | Tumors of the epithelial lining and endocrine glands. Concept of precancer. Mesenchymal tumors. Benign and malignant tumors. Cancer. Sarcoma. Metastasis. Clinical significance. Tumors of the dental and maxillary systems. | LO2 LO3 LO4 | 2 | Discussion of the topic, description of macro- and micropreparations with a conclusion , case study | Checklist descriptions of macro- and micropreparations , case solution checklist |

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| | Pathological anatomy . SIWT / SIW 8 | Midterm Examination-2 | Leukemia and regional lymphomas. Etiology, pathogenesis, morphogenesis, pathological anatomy. Causes of death. Clinical significance.<br><br>Topics of lectures, practical classes, independent work, covered during 1-5 days of training | LO1 LO2 LO3 LO4 | 1/3 | Integrated control of educational achievements using control educational cases, testing | Checklist case solutions , testing checklist |

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| 8.1 | Preparation and implementation of interim assessment | 18 hours |

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| **9.** | **Teaching methods** | |
| 9.1 | Lectures | Overview lectures |
| 9.2 | Practical classes | Work in small groups , discussion of the topic, case study , description of macro- and micropreparations with a conclusion |
| 9.3 | SIWT / SIW | Case - study , autopsy |
| 9.4 | Midterm Examination | Integrated monitoring of educational achievements using control educational cases , testing |

**10. Evaluation criteria**

**10.1 Criteria for assessing the results of the discipline**

| No. LO | Name of learning outcomes | Unsatisfactory | Satisfactorily | Good | Excellent |
|---|---|---|---|---|---|
| LO1 | Demonstrates knowledge of general pathology, understanding of the patterns of development of changes in cells and tissues in various pathological conditions. | Does not explain the patterns of development of changes in cells and tissues in various pathological conditions | Has difficulty explaining the patterns of development of changes in cells and tissues in various pathological conditions | Explains the patterns of development of changes in cells and tissues in various pathological conditions | Freely explains the patterns and development of changes in cells and tissues in various pathological conditions |
| LO 2 | Explains the etiology, pathogenesis, and morphogenesis of general pathological processes. | Does not demonstrate knowledge of the etiology, pathogenesis, morphogenesis of general pathological processes | Demonstrates knowledge of the etiology, pathogenesis, morphogenesis of general pathological processes, but makes gross errors | Demonstrates knowledge of the etiology, pathogenesis, and morphogenesis of general pathological processes , but allows for minor inaccuracies | Demonstrates knowledge of the etiology , pathogenesis , morphogenesis of general pathological processes |
| LO 3 | Determines pathological changes and functional disorders at the organ, tissue and cellular levels , describes macro- and micropreparations and analyzes the results of clinical laboratory and experimental studies. | 1. Does not determine pathological changes and functional disorders at the organ, tissue and cellular levels .<br>2. Does not describe macro- and micro - | 1. Determines pathological changes and functional disorders at the organ, tissue and cellular levels .<br>2. Describes macro- and micro - | 1. Identifies pathological changes and functional disorders at the organ, tissue and cellular levels . | 1. Independently identifies pathological changes and functional disorders at the organ, tissue and cellular levels . |

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| | | preparations and does not analyze the results of clinical, laboratory and experimental studies | preparations and analyzes the results of clinical, laboratory and experimental studies , but makes gross errors | 2. Describes macro- and micro - preparations and analyzes the results of clinical , laboratory and experimental studies, but allows for minor inaccuracies | 2. Independently describes macro- and micro - preparations and analyzes the results of clinical , laboratory and experimental studies |
| LO 4 | Makes conclusions on macro- and micropreparations, as well as on the results of clinical laboratory and experimental studies, and predicts the outcomes of pathological changes in organs and tissues during general pathological processes when solving cases. | 1. Does not draw conclusions based on macro- and micro - preparations , as well as on the results of clinical, laboratory and experimental studies in general pathological processes . 2. Does not predict the outcomes of pathological changes in organs and tissues in general pathological processes when solving cases | 1. Makes conclusions on macro- and micro - preparations , as well as on the results of clinical, laboratory and experimental studies in general pathological processes , but makes gross errors. 2. Predicts the outcomes of pathological changes in organs and tissues during general pathological processes , but makes gross errors when solving cases | 1. Makes conclusions on macro- and micro - preparations , as well as on the results of clinical, laboratory and experimental studies in general pathological logical processes , but allows for minor inaccuracies. 2. Predicts the outcomes of pathological changes in organs and tissues during general pathological processes , but allows for minor inaccuracies when solving cases | 1. Independently makes conclusions on macro- and micro - preparations , as well as on the results of clinical, laboratory and experimental studies in general pathological processes . 2. Independently predicts the outcomes of pathological changes in organs and tissues during general pathological processes when solving cases |

**10.2 Criteria for assessing teaching methods and technologies**

**Multi-point knowledge assessment system**

| Letter Grading | Digital equivalent of points | Percentage content | Traditional system assessment |
|---|---|---|---|
| A | 4.0 | 95-100 | Great |
| A - | 3.67 | 90-94 | |
| B + | 3.33 | 85-89 | Fine |
| B | 3.0 | 80-84 | |
| 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 | |

**Checklist for the lesson**

| Form of control | Grade | Evaluation criteria |
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| Work in small groups ( implementation of practical work ) | Exellent corresponds to points 95-100 90-94 | - completed the practical work on time and without any errors and submitted a report on it;<br>- took an active part in the discussion of the research results;<br>- made a well-reasoned conclusion, while demonstrating original thinking |
| | Good corresponds to points 85-89 80-84 75-79 70-74 | - completed practical work on time and submitted a report on it, making unfundamental mistakes;<br>- took an active part in the discussion of the research results |
| | Satisfactorily corresponds to points 65-69 60-64 50-54 | - completed practical work on time and submitted a report on it, making fundamental mistakes;<br>- was not active during the discussion, needed the teacher's help |
| | Unsatisfactory corresponds to points 25-49 | - failed to submit the practical work report on time, made gross errors, and did not complete all the practical work required by the program;<br>- did not take part in the discussion of the results of the work |
| | Unsatisfactory corresponds to points 0-24 | |
| Case - study | Exellent corresponds to points 95-100 90-94 | - solved cases within a certain time;<br>- gave full answers to all questions |
| | Good corresponds to points 85-89 80-84 75-79 70-74 | - solved cases within a certain time;<br>- gave complete answers to all questions;<br>- made minor mistakes when solving cases |
| | Satisfactorily corresponds to points 65-69 60-64 50-54 | - solved cases within a certain time;<br>- gave incomplete answers to questions;<br>- made fundamental mistakes when solving cases |
| | Unsatisfactory corresponds to points 25-49 | - solved the cases incorrectly or did not solve them at all ;<br>- made gross mistakes when solving cases |
| | Unsatisfactory corresponds to points 0-24 | |
| Discussion of the topic | Exellent corresponds to points 95-100 90-94 | - did not make any mistakes during the discussion;<br>- was oriented in the theories, concepts and directions of general pathology and gave them a critical assessment;<br>- used scientific achievements of other disciplines |
| | Good corresponds to points 85-89 80-84 75-79 70-74 | - during the discussion he did not make any gross mistakes, but he did make inaccuracies and minor errors, which he corrected himself;<br>- managed to systematize the program material with the help of the teacher |

| | | |
|---|---|---|
| | Satisfactorily corresponds to points 65-69 60-64 50-54 | - made fundamental mistakes during the discussion;<br>- limited himself to only the educational literature specified by the teacher;<br>- experienced great difficulty in systematizing the material |
| | Unsatisfactory corresponds to points 25-49 | - made gross mistakes during the discussion;<br>- did not study the basic literature on the topic of the lesson;<br>- failed to use scientific terminology of general pathology |
| | Unsatisfactory corresponds to points 0-24 | |

**Checklist for midterm assessment**

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

**Checklist for the subject pathological anatomy**

Checklist for practical lesson

| Form of control | Grade | Evaluation criteria |
|---|---|---|
| Case study | Excellent corresponds to points 95-100 90-94 | - solved cases within a certain time;<br>- gave full answers to all questions<br>Demonstrates original thinking when analyzing a situational task. Fully utilizes the theoretical knowledge necessary to solve a given task. Demonstrates the ability to draw logical conclusions on a situational task, while demonstrating a deep understanding of the necessary educational material. |
| | Good corresponds to points 85-89 80-84 75-79 70-74 | - solved cases within a certain time;<br>- gave complete answers to all questions;<br>- made minor mistakes when solving cases<br>Possesses the necessary knowledge to solve this situational task. Allows for minor inaccuracies when discussing this case. Is able to draw correct conclusions on the proposed situational task. |
| | Satisfactorily corresponds to points 65-69 60-64 50-54 | - solved cases within a certain time;<br>- gave incomplete answers to questions;<br>- made fundamental mistakes when solving cases<br>Allows minor inaccuracies when discussing a given task, has difficulty interpreting analyses proposed in a situational task. Draws conclusions with difficulty |
| | Unsatisfactory corresponds to points 25-49 | - solved cases incorrectly or did not solve them at all;<br>- made gross mistakes when solving cases<br>Allows fundamental errors in discussing a situational task. Passive, unable to draw appropriate conclusions. |
| | Unsatisfactory corresponds to points 0-24 | |
| Description of the macropreparation | " Excellent" corresponds to points 95-100 90-94 | -correctly named the organ, indicated the dimensions,<br>- described the surface: the condition of the capsule or serous membrane, dullness, shine, overlap;<br>- gave a description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency;<br>-made the correct pathological conclusion/diagnosis |
| | Good corresponds to points | - correctly named the organ, indicated the dimensions, described the surface: |

| | | |
|---|---|---|
| | 85-89<br>80-84<br>75-79<br>70-74 | condition of the capsule or serous membrane, dullness, shine, overlap;<br>- gave a description of the pathological focus: indicated the location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency;<br>- made the correct pathological conclusion/diagnosis, but during the answer made minor mistakes and inaccuracies |
| | "Satisfactorily"<br>corresponds to points<br>65-69<br>60-64<br>50-54 | - correctly named the organ, did not indicate the dimensions, did not fully describe the surface: did not describe the condition of the capsule or serous membrane, dullness, shine, overlap;<br>- gave an incomplete description of the pathological focus:<br>did not indicate indicated location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency;<br>- made the correct pathological conclusion/diagnosis, but during the answer made fundamental mistakes and inaccuracies |
| | "Unsatisfactory"<br>corresponds to points<br>25-49 | - correctly named the organ, did not indicate the size, did not describe the surface: did not describe the condition of the capsule or serous membrane, dullness, shine, overlap;<br>- gave an incorrect description of the pathological focus:<br>did not indicate indicated location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency;<br>- made the correct pathological conclusion/diagnosis, but during the answer made fundamental mistakes and inaccuracies |
| | "Unsatisfactory"<br>corresponds to points<br>0-24 | - incorrectly named the organ, did not indicate the size, did not describe the surface: did not describe the condition of the capsule or serous membrane, dullness, shine, overlap;<br>- gave an incorrect description of the pathological focus:<br>did not indicate indicated location, size, shape (if it is an ulcer - the condition of the bottom), color, consistency;<br>- made an incorrect pathological conclusion/diagnosis, made gross errors during the answer, left some questions unanswered |
| Description of the microslide | " Excellent"<br>corresponds to points<br>95-100<br>90-94 | -correctly named the organ or tissue, correctly characterized<br>pathological changes: localization, made a description, named the color;<br>-made the correct pathological conclusion/diagnosis |
| | " Good"<br>corresponds to points<br>85-89<br>80-84<br>75-79<br>70-74 | -correctly named the organ or tissue, correctly characterized<br>pathological changes: localization, made a description, named the color; |

| | | |
|---|---|---|
| | | - made the correct pathological conclusion/diagnosis, but during the answer made minor mistakes and inaccuracies |
| | "Satisfactorily" corresponds to points 65-69 60-64 50-54 | - correctly named an organ or tissue, incorrectly characterized pathological changes: localization, made a description, incorrectly named the color;<br>- made the correct pathological conclusion/diagnosis, but during the answer made fundamental mistakes and inaccuracies |
| | "Unsatisfactory" corresponds to points 25-49 | - correctly named an organ or tissue, incorrectly characterized pathological changes: localization, made a description, incorrectly named the color;<br>-made the correct pathological conclusion/diagnosis, made gross errors during the answer |
| | "Unsatisfactory" corresponds to points 0-24 | - incorrectly named an organ or tissue, incorrectly characterized pathological changes: localization, made a description, incorrectly named the color;<br>- made an incorrect pathological conclusion/diagnosis, made gross mistakes during the answer, left some questions unanswered |
| Discussion of the topic | Excellent corresponds to points 95-100 90-94 | - did not make any mistakes during the discussion;<br>- was oriented in the theories, concepts and directions of the discipline and gave them a critical assessment;<br>- used scientific achievements of other disciplines |
| | Good corresponds to points 85-89 80-84 75-79 70-74 | - during the discussion he did not make any gross mistakes, but he did make inaccuracies and minor errors, which he corrected himself;<br>- managed to systematize the program material with the help of the teacher |
| | Satisfactorily corresponds to points 65-69 60-64 50-54 | - made fundamental mistakes during the discussion;<br>- limited himself to only the educational literature specified by the teacher;<br>- experienced great difficulty in systematizing the material |
| | Unsatisfactory corresponds to points 25-49 | - made gross mistakes during the discussion;<br>- did not study the basic literature on the topic of the lesson;<br>- failed to use the scientific terminology of the discipline |
| | Unsatisfactory corresponds to points 0-24 | - found it difficult to answer;<br>- did not study the basic literature on the topic of the lesson;<br>- failed to use the scientific terminology of the discipline |

Checklist of SIWT and SIW

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

| No. | Evaluation Criteria/Evaluation | Excellent | Good | Satisfactoril y | Unsatisfactory |
|---|---|---|---|---|---|
| 1 | Name of the organ | 5.0-4.0 | 3.9-3.0 | 2.9-2.0 | 1.9-0 |
| 2 | Organ size | 5.0-4.0 | 3.9-3.0 | 2.9-2.0 | 1.9-0 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Surface: condition of the capsule or serous membrane, dullness, shine, superposition | 10.0-9.0 | 8.9-7.0 | 6.9-5.0 | 4.9-0 |
| 4 | Characteristics of the pathological focus: Localization, size, shape (if an ulcer – condition of the bottom), color, consistency | 20.0-19.0 | 18.9-15.0 | 14.9-11.0 | 10.9-0 |
| 5 | Pathological diagnosis/conclusion | 10.0-9.0 | 8.9-7.0 | 6.9-5.0 | 4.9-0 |
| 6 | Total | 50.0-45.0 | 44.5-35.0 | 34.5-25.0 | 24.5-0 |

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

| No. | Evaluation Criteria/Evaluation | Excellent | Good | Satisfactorily | Unsatisfactory |
|---|---|---|---|---|---|
| 1 | Name of an organ or tissue | 10.0-9.0 | 8.9-7.0 | 6.9-5.0 | 4.9-0 |
| 2 | Characteristics of pathological changes: localization, description | 25.0-23.0 | 22.9-20.0 | 19.9-15.0 | 14.9-0 |
| 3 | Coloring | 5.0-4.0 | 3.9-3.0 | 2.9-2.0 | 1.9-0 |
| 4 | Pathological diagnosis/conclusion | 10.0-9.0 | 8.8-5.0 | 4.8-3.0 | 2.8-0 |
| 5 | Total | 50.0-45.0 | 44.5-35.0 | 34.5-25 | 24.5-0 |

## 11. Educational resources

| | |
|---|---|
| Electronic resources | 1. Electronic library of YUKMA - https://e-lib.skma.edu.kz/genres<br>2. Republican Interuniversity Electronic Library (RIEL) – http://rmebrk.kz/<br>3. Digital library "Aknurpress" - https://www.aknurpress.kz/<br>4. Electronic library "Epigraph" - http://www.elib.kz/<br>5. Epigraph - portal of multimedia textbooks https://mbook.kz/ru/index/<br>6. EBS IPR SMART https://www.iprbookshop.ru/auth<br>7. information and legal system "Zan" - https://zan.kz/ru<br>8. Medline Ultimate EVSCO<br>9. eBook Medical Collection EBSCO<br>10. Scopus - https://www.scopus.com/ |
| Electronic textbooks | **Pathological Physiology:**<br>1. Патологиялық физиология. Тәжірибелік сабақтарға нұсқау [Электронный ресурс] : оқу құралы = Патофизиология. Руководство к практическим занятиям : учебное пособие / қаз. тіліне ауд. С. Б. Жәутікова ; ред. В. В. Новицкий. - Электрон. текстовые дан. (63,4Мб). - М. : ГЭОТАР - Медиа, 2014. - 768 бет. эл. опт. диск (CD-ROM)<br>2. Патологиялық физиология. Досжанова М.П. , – Алматы: Эверо, 2015 ЦБ Aknurpress / https://www.aknurpress.kz/reader/web/2476<br>3. Кравцов В.И и др. Тестовые задания по патологической физиологии с элементами профилизации / Под ред.профессора В.И. Кравцов.- .Алматы: Эверо,2020. - 116 с.https://www.elib.kz/ru/search/read_book/472/<br>4. Кравцов В.И и др. Тестовые задания по патологической физиологии с элементами профилизации / Под ред. профессора В.И. Кравцов.- .Алматы: Эверо,2020. - 128 с.https://www.elib.kz/ru/search/read_book/471/<br>5. Кравцов В.И и др. Тестовые задания по патологической физиологии с элементами профилизации / Под ред.профессора В.И. Кравцов.- .Алматы: Эверо,2020. - 104 с. https://www.elib.kz/ru/search/read_book/473/<br>6. Патологиялық физиология: 2 том. Оқулық/қазақ тіліне аударған, жауапты редактор Ж.Б. Ахметов. , – Алматы: Эверо, 2020 - 200 https://www.elib.kz/ru/search/read_book/91/<br>7. Патологиялық физиология: 1 том. Оқулық/қазақ тіліне аударған, жауапты редактор Ж.Б.Ахметов., – Алматы: Эверо, 2020 - 240 с https://www.elib.kz/ru/search/read_book/88/ |

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## 12. Discipline Policy

**Requirements for students (attendance, behavior, grading policy, penalties, incentives, etc.)**

- observe medical ethics and deontology;
- no smoking in the academy;
- maintain cleanliness in the department;
- do not damage furniture in classrooms;
- treat textbooks with care;
- maintain the appearance of a medical university student;
- observe safety regulations;
- during quarantine, wear medical masks and comply with sanitary and epidemiological regulations;
- do not miss classes without a good reason;
- classes missed for a valid reason must be made up in a timely manner, but only with permission from the dean's office and at a time determined by the teacher;
- don't be late for classes;
- have the necessary documentation in class: syllabus, methodological instructions for classes, lectures, notebook and textbook;
- prepare for classes conscientiously;
- be active during classes;
- do not engage in other activities during classes: do not talk, do not smoke, do not chew gum, do not eat food, do not use the phone, do not listen to music, do not read newspapers and magazines, do not prepare for classes in another subject;
- maintain silence and order during breaks;
- implement SIW in a timely manner.

Penalties for failure to complete sections of the work:

- If you miss lectures without a valid reason, your midterm assessment grade will be reduced – 1 point for each missed lecture;
- If you miss a SIW without a valid reason, your midterm assessment score will be reduced by 2 points for each missed lesson;
- In case of a single violation of the discipline policy, the student is given a warning;
- In case of systematic violation of the discipline policy, information about the student's behavior is transferred to the faculty dean's office.

Criteria for non-admission to final control:

A student who has received an unsatisfactory grade for one of the types of tests (RC 1, RC 2, average grade of the current test) is not admitted to the final test for the discipline.

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

Regulations and Rules of SKMA. Academic policy.

P.4. Code of honor of the student

P.10. Organization of the educational process

The final grade is calculated automatically based on the average grade of the current control, the average grade of the midterm control and the grade of the final control.

**Final score** (100%) = **RA**(60%) + **FC**(40%)

**RA**(60%) = **MEavg** (20%) + **CCavg** (40%)

**RK av** = (RK 1 + RK 2 ): 2

**Final score** (100%) = **MEavg** x 0.2 + **CCavg** x 0.4 + **FC**x 0.4

**RA**– rating of admission
**FC**- assessment of final control
**MEavg** – average score of midterm control, taking into account penalty points
**CC av** – average assessment of current control taking into account SIW
**ME1** – midterm examination 1
**ME 2** – midterm examination2

**14. Approval and revision**

| | | | |
|---|---|---|---|
| **Date of agreement with the Library and Information Center** | **Protocol №** 7 | Name of the Head of BIC | Signature |
| 25.06.25 | | Дарбитева Р.И | |
| **Date of approval for the SIWT** | **Protocol №** | Full name of the head | Signature |
| 30.06.25 | N6 | Кенбаева А.О | |
| **Date of approval at the department** | **Protocol №** | Full name of the head | Signature |
| 26.06.25 | 13 | Sadykova A.Sh | |
| **Revision date at the department** | **Protocol №** | Full name of the head | Signature |
| | | | |
| **Date of revision to the SIWT** | **Protocol №** | Full name of the head | Signature |
| | | | |