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**Federal State Budgetary Educational Institution of Higher Education
"Ural State Medical University"
Ministry of Health of the Russian Federation
Department of Pathological Anatomy and Forensic Medicine**



УТВЕРЖДАЮ
Проректор по образовательной деятельности
А.А. Ушаков
«12» июня 2025 г.

**Work program of the discipline
pathological anatomy
(including pathological anatomy of the head and neck)**

Specialties: 31.05.03 Dentistry
Level of higher education:
specialist Qualification: dentist

Yekaterinburg city
2025 year

The work program of the discipline "Pathological anatomy (including pathological anatomy of the head and neck)" is compiled in accordance with the requirements of the Federal State Educational Standard of Higher Education in the specialty 31.05.03 Dentistry (specialist level), approved by order of the Ministry of Education and Science of the Russian Federation dated 08/12/2020, No. 984, and taking into account the requirements of the professional standard "Dentist", approved by order of the Ministry of Labor and Social Protection of the Russian Federation of 05/10/2016 No. 224 n. (registered with the Ministry of Justice of the Russian Federation on June 2, 2016, reg. No. 42399).

The program has been compiled:

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Reviewer:

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The program was discussed and approved at a meeting of the Department of Pathological Anatomy

Head Department of Pathological Anatomy and Forensic Medicine USMU MD, prof.

L.M. Greenberg

« 20 » March 2025

Protocol No. 7

The program was discussed and approved by the methodological commission in the specialty DENTISTRY

« 9 » April 2025

Protocol No. 8

1. PURPOSE OF STUDYING THE DISCIPLINE:

Aim studying the discipline "Pathological anatomy, pathological anatomy of the head and neck" is the study of the structural (material) foundations of general pathological processes and diseases, their etiology and pathogenesis, with special attention to orofacial pathology, as the basis for making a clinical decision, substantiating the principles of medical strategy, tactics, the choice of methods for the detection, treatment, rehabilitation and prevention in possible professional activities of a graduate doctor in the specialty Dentistry, as well as providing a scientific basis for the possession of professional competencies for the implementation of medical, research professional activities, for the development of competencies by graduates in accordance with the Federal State Educational Standard of Higher Education Dentistry, capable and ready to perform the labor functions required by the professional standard "Dentist".

2. OBJECTIVES OF THE DISCIPLINE:

tasks disciplines are:

- formation of ideas about the structure, function and organization of the pathoanatomical service in the Russian Federation, regulatory documents regulating its activities;
- formation of ideas about the diagnostic possibilities of using various methods of morphological studies of biological material (surgical, biopsy, sectional); the rules for taking, studying and analyzing the material, the clinical interpretation of the results and the role in making a preliminary diagnosis;
- mastering knowledge about structural changes in cells, tissues and organs during the development of general pathological processes, the totality of which determines the morphological manifestations of a particular disease;
- learning about the etiology, pathogenesis, morphology and morphogenesis of diseases; structural bases of outcomes and complications, long-term consequences of the disease, leading to disability;
- the assimilation of knowledge about the morphology of diseases arising in connection with changes in human living conditions, under the influence of new methods of treatment (pathomorphosis) and due to adverse effects (pathology of therapy).
- formation of skills to analyze the results of morphological studies with the subsequent execution of the conclusion;
- formation of ideas about the structure of the pathoanatomical diagnosis, causes of death;
- formation of skills to determine the causes of death, filling out a medical certificate of death with an encryption of the diagnosis using ICD-10 headings.

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF OOP

The discipline "Pathological anatomy (including the pathological anatomy of the head and neck)" refers to the mandatory part of Block 1 "Disciplines (modules)" of the BEP in the specialty 31.05.03 - Dentistry.

4. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

The study of the discipline is aimed at the formation of the following (most important) competencies necessary to perform labor functions and labor actions in accordance with the professional standard "Dentist":

a) General professional competencies of graduates

Category (group) of general professional competencies	Code and name of general professional competence	Labor function index and its content (from PS)	Code and name of indicators of achievement of general professional competence, which are formed by the discipline
<i>Fundamentals of fundamental and natural science knowledge</i>	OPK-9. Able to assess morphofunctional states and pathological processes in the human body to solve professional problems	Labor function A/01.7 Diagnosis of dental diseases in children and adults, diagnosis	IOPC-9.1 Knows: anatomy, histology, embryology, topographic anatomy, physiology, pathological anatomy and physiology of human organs and systems IOPC 9.2 Able to: evaluate the basic morphological and functional data, physiological conditions and pathological processes in the human body IOPC 9.3 Has practical experience: assessment of basic morphological and functional data, physiological conditions and pathological processes in the human body when solving professional problems

The study of the discipline "Pathological anatomy (including pathological anatomy of the head and neck)" is aimed at developing students' ability and readiness to perform the following labor functions/actions in their professional activities (in accordance with the professional standard "Dentist", approved by order of the Ministry of Labor and Social Protection of the Russian Federation dated May 10, 2016 No. 224 n. (registered with the Ministry of Justice of the Russian Federation on June 2, 2016, reg. No. 42399):

- Labor function** A/01.7 Diagnosis of dental diseases in children and adults, diagnosis:
- Examination and physical examination of children and adults with dental diseases
 - Interpretation of examination and physical examination findings in children and adults with dental disease
 - Diagnosis in children and adults of dental caries, non-carious lesions, diseases of the pulp and periodontium, periodontium, oral mucosa and lips
 - Diagnosis in children and adults of defects in teeth, dentition, dentoalveolar deformities, anomalies of teeth and jaws, complete absence of teeth
 - Identification of risk factors for oncological diseases of the maxillofacial region (hereinafter referred to as MFR) in children and adults with dental diseases
 - Formulation of a preliminary diagnosis, drawing up a plan for conducting laboratory and instrumental studies in children and adults with dental diseases in accordance with the procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
 - Interpretation of data from the results of instrumental and laboratory studies of children and adults with dental diseases
 - Referral of children and adults with dental diseases for additional examinations in accordance with the current procedures for providing dental care to adults and children,

- based on clinical recommendations (treatment protocols), taking into account the standards of medical care
- Interpretation of data from additional examinations of children and adults with dental diseases
 - Referral of children and adults with dental diseases for consultations to specialist doctors in accordance with the procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
 - Interpretation of the results of consultations of children and adults with dental diseases by specialist doctors
 - Diagnosis taking into account the current International Statistical Classification of Diseases and Related Health Problems (hereinafter - ICD)
 - Carrying out differential diagnosis of dental diseases
 - Making a final diagnosis based on the current ICD
 - Apply methods of examination and physical examination of children and adults with dental diseases
 - Interpret examination and physical examination findings in children and adults with dental disease
 - Diagnose dental caries, non-carious lesions, pulp and periodontal diseases, periodontal disease, oral mucosa and lips in children and adults with dental diseases
 - Diagnose in children and adults with dental diseases defects of teeth, dentition, dentoalveolar deformities and anomalies of teeth and jaws, complete absence of teeth
 - Identify risk factors for cancer in children and adults with dental disease
 - Formulate a preliminary diagnosis, draw up a plan for conducting laboratory and instrumental studies in children and adults with dental diseases in accordance with the procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
 - Refer children and adults with dental diseases for additional examinations in accordance with the current procedures for the provision of dental care, based on clinical recommendations (treatment protocols), taking into account the standards of medical care
 - Refer children and adults with dental diseases for consultations with specialist doctors in accordance with the procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care
 - Interpret and analyze the results of laboratory, instrumental, additional studies
 - Interpret and analyze the results of consultations by medical specialists of children and adults with dental diseases
 - Conduct differential diagnostics between dental diseases, with other diseases and (or) conditions, including urgent ones
 - Formulate a final diagnosis based on the current ICD
 - Detect clinical signs of sudden acute diseases, conditions, exacerbations of chronic diseases without obvious signs of a threat to life, requiring emergency medical care

- Knowledge of the anatomy of the head, maxillofacial region, features of blood supply and innervation; the structure of the teeth; histology and embryology of the oral cavity and teeth, the main violations of embryogenesis.
- Knowledge of the anatomical and functional state of the organs of the maxillofacial area in all age groups
- Knowledge of the normal and pathological physiology of the dental system, its relationship with the functional state of other body systems and the levels of their regulation in all age groups
- Knowledge of methods of examination and physical examination, features of clinical dental examination in children and adults with dental diseases
- Knowledge of the clinical picture, diagnostic methods, classification of diseases of the teeth, periodontium, oral mucosa, lips in children and adults
- Knowledge of the clinical picture, diagnostic methods, classification of diseases of the bone tissue of the jaws, peripheral nervous system of the maxillofacial region, temporomandibular joint in children and adults
- Knowledge of methods of laboratory and instrumental studies for assessing the state of health, medical indications for conducting studies, rules for interpreting their results
- Knowledge of ICD

As a result of mastering the discipline, the student must **know**:

- anatomical-physiological, age-sex and individual features of the structure and development of the human body;
- the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology;
- functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes;

the student must **be able to**

- use educational, scientific, popular science literature, the Internet for professional activities;
- work with magnifying equipment (microscope);
- assess the histophysiological state of the main cellular, tissue and organ structures of the body;
- to substantiate the nature of the pathological process and its clinical manifestations, the principles of pathogenetic therapy of the most common diseases, in particular dental ones;
- give a conclusion and formulate a pathoanatomical diagnosis; complete a medical certificate of death;

the student must **own**:

- medical-functional conceptual apparatus;
- the skills of making a preliminary diagnosis based on the results of laboratory and instrumental examination of patients.

The process of studying the discipline is aimed at developing students' ability and readiness to perform labor functions/actions in their professional activities (in accordance with the professional standard "Dentist", approved by order of the Ministry of Labor and Social Protection of the Russian Federation dated May 10, 2016 No. 227n)

5. VOLUME OF DISCIPLINE AND TYPES OF EDUCATIONAL WORK

Type of study work	Labor intensity (hours)	Semesters*	
		3rd	4th
Classroom activities (total)	106	52	54
Including:			
Lectures	34	16	18
Practical lessons	72	36	36
Seminars			
Independent work:	47		
Forms of attestation by discipline (exam)	27		
General labor intensity	Hours	BRO THER IN LAW	
	180		5

6. CONTENT OF THE DISCIPLINE

6.1. The content of discipline sections and didactic units

No	Section name (didactic units)	Content
Disciplinary module number 1. General pathological anatomy (DE 1-7)		
1.	DE-1 Introduction to pathological anatomy. The history of the development of pathological anatomy. Content, tasks, methods of studying pathological anatomy. Pathology service. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	Pathological anatomy. Content, tasks, objects, methods and levels of research. Historical data: stages of development of pathology, the role of the Russian school of pathological anatomy. Research methods in pathological anatomy.
2.	DE-2 Apoptosis. Necrosis. Death and posthumous changes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	Damage and death of cells and tissues. Morphology of damage. Cell death - definition, classification, morphological manifestations. Causes, mechanisms, types and pathogenesis of cell damage. Morphology of cell damage and death. Necrosis. Causes, mechanism of development, morphological characteristics, clinical and morphological forms of necrosis, diagnostic methods, outcomes. Apoptosis - definition, mechanisms of development, morphological characteristics and diagnostic methods. stages of apoptosis. Significance of apoptosis. Death, species, post-mortem changes.
3.	DE-3 Exo- and endogenous intra- and extracellular accumulations (parenchymal, stromal-vascular dystrophies)	Intracellular accumulations: definition, mechanisms of development. Varieties: Accumulation of lipids (lipidoses). Accumulation of proteins (dysproteinoses). Accumulation of glycogen. Causes, patho- and morphogenesis, morphological characteristics and diagnostic methods, clinical manifestations, outcomes..

	OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	
4.	DE-4. Mixed dystrophies. Violation of blood and lymph circulation - 1. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	<p>Metabolic disorders of pigments (chromoproteins), minerals. Causes, patho- and morphogenesis, morphological characteristics, diagnosis, clinical manifestations, outcomes.</p> <p>Rickets.</p> <p>Circulatory disorders: classification. Causes, mechanisms of development, types, morphology and diagnostic methods, clinical significance, complications, outcomes..</p> <p>Violation of the blood supply. Congestion (hyperemia). Arterial plethora. Venous plethora: local, general, acute, chronic. Ischemia. Heart attack.</p> <p>Violation of the permeability and integrity of the vascular wall. Bleeding, hemorrhages. Hemorrhagic diathesis.</p> <p>Violation of blood rheology. Thrombosis. Thrombus, embolism. Orthograde, retrograde and paradoxical embolism. Thromboembolism. Thromboembolism of the pulmonary artery, acute cor pulmonale.</p>
5.	DE-5 Violation of blood and lymph circulation - 2. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	<p>Bleeding external and internal, hemorrhages. Causes, types, morphology, outcomes, significance. Hemorrhagic diathesis. The concept of local and general circulatory disorders, their relationship, classification.</p> <p>Embolism. Orthograde, retrograde and paradoxical embolism. Thromboembolism. Thromboembolism of the pulmonary artery, acute cor pulmonale.</p> <p>Complex pathological conditions: Definition, types, mechanisms of development, stages, morphological characteristics, clinical manifestations. Cardiovascular insufficiency. Shock. Syndrome of disseminated intravascular coagulation. thromboembolic syndrome.</p> <p>Violations of water and electrolyte balance. Transudate, dropsy Exykosis.</p> <p>Violation of lymphatic circulation. Lymphostasis, lymphedema.</p>
6.	DE-6 Inflammation, general. exudative inflammation. productive inflammation. granulomatous diseases. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	<p>Inflammation: definition, essence and biological significance. Stages of the inflammatory response. Classification. Types of inflammation. Acute inflammation. Exudate. Outcomes of acute inflammation. Exudative inflammation: serous, fibrinous (croupous, diphtheritic), purulent (phlegmon, abscess, empyema), catarrhal, hemorrhagic, mixed. Morphological characteristics, clinical significance. General manifestations of inflammation: pathogenesis, etiological features, outcomes, complications.</p> <p>Chronic inflammation. Causes, pathogenesis. Mechanisms of formation and morphological features (the nature of the infiltrate, persistent destruction of the connective tissue), and diagnostic methods, outcomes, complications.</p> <p>Granulomatous inflammation (acute and chronic). Pathogenetic types of granulomas. Morphological manifestations of granulomatous inflammation.</p> <p>Interstitial inflammation.</p> <p>Productive inflammation with the formation of polyps and genital warts.</p>

		Sclerosis, types, etiopathogenetic classification, significance.
7.	DE-7 immunopathological processes. Regeneration. Processes of adaptation and compensation. Wound healing. Sclerosis. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	<p>Pathological conditions of the immune system. Classification: 1) hypersensitivity reactions, 2) autoimmune diseases, 3) immune deficiency syndromes, 4) amyloidosis.</p> <p>Theories of etiology, phases, mechanisms of development, clinical and morphological characteristics, clinical significance</p> <p>Hypersensitivity reactions. transplant rejection.</p> <p>Autoimmunization and autoimmune diseases.</p> <p>Immune deficiency syndromes. Primary immunodeficiencies. Secondary (acquired) immunodeficiencies.</p> <p>Amyloidosis: amyloid - structure, physico-chemical properties; methods for diagnosing amyloidosis, and pathogenesis, principles of classification. Aging amyloid: morphological characteristics, clinical manifestations.</p> <p>Adaptation processes: definition, causes, mechanisms, types, stages, clinical and morphological characteristics. clinical significance, Physiological and pathological adaptation. hyperplasia and hypertrophy. Atrophy: Metaplasia: definition, types. Metaplasia in epithelial and mesenchymal tissues: morphological characteristics, role in carcinogenesis. Dysplasia. Repair, regeneration and wound healing. Regeneration. granulation tissue. Scar morphogenesis. Pathological aspects of inflammation and regeneration.</p>
Disciplinary module 2. Pathological anatomy of the head and neck (DE 8-18)		
8.	DE-8 Tumors, general provisions. Histo- and morphogenesis of tumors. Classification of tumors. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	<p>Tumors. Definition, role in human pathology. Etiology and pathogenesis of tumors. Risk factors for tumor growth. stages of carcinogenesis.</p> <p>Chemical, radiation carcinogenesis. Viral carcinogenesis. Precancerous (precancerous) conditions and changes, morphology.</p> <p>Morphogenesis of tumors. Mechanisms of invasive growth.</p> <p>Nomenclature and principles of classification. Determination of the degree of malignancy of the tumor according to the TNM system.</p> <p>Importance of biopsy in oncology. Benign and malignant tumors: varieties, comparative characteristics. Histogenesis (cytogenesis) and differentiation Tumors. The main properties of the tumor. Types of tumor growth. Tumor atypism. Secondary changes in the tumor. Tumor recurrence. Influence of a tumor on an organism Metastasis.</p>

9.	DE-9. Disease. Nosology Diagnosis. ICD-10. Hemoblastoses, general characteristics; CHLO defeat. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	Introduction to private pathological anatomy. Nosology is the science of diseases and methods of their classification. Etiology, pathogenesis, morphogenesis. Disease. nosological unit. Diagnosis, its structure. International Classification of Diseases (ICD). The concept of iatrogenesis. Hemoblastosis. Etiology. Definition, modern diagnostic methods, stages of the course, classification, general clinical and morphological characteristics, complications, age-related features, prognosis, causes of death. Modern methods of treatment Tumors of hematopoietic tissues (leukemia). Classification.
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		Leukemias are primary tumor lesions of the bone marrow. Hodgkin's disease: clinical stages, pathological and histological types, morphological characteristics and diagnostic methods, clinical manifestations, causes of death. Non-Hodgkin's lymphomas. Damage to the lymph nodes of the neck, oral mucosa, jaw bones and salivary glands in leukemia and lymphomas.
10.	DE-10. epithelial tumors. Precancerous processes and epithelial tumors of the maxillofacial region. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	Epithelial tumors, general characteristics. Stages of cancer development. International TNM system for epithelial tumors. Pretumours, benign and malignant tumors of the orofacial region, morphological characteristics. Basalioma. Epithelial tumors of the breast, uterus, ovaries, kidneys, prostate
11.	DE-11. Soft tissue tumors, tumors of the nervous tissue. Damage to the maxillofacial region. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	Mesenchymal tumors, general characteristics. The concept of "soft tissue tumors". International TNM system for mesenchymal tumors. Sarcoma, its types. Special types of mesenchymal tumors; orofacial lesions. Tumors of the central and peripheral nervous system, morphological characteristics.
12.	DE-12 Tumors of melanin-forming tissue. Tumor-like processes of the jaw bones. Cysts of the jaw bones. Tumors of the jaw bones. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	Tumors of melanin-forming tissue, morphological characteristics; orofacial lesions. Tumor-like processes of the jaw bones: epulis, fibrous dysplasia, cherubism. cysts. Classification. Epithelial cysts: dysontogenetic (odontogenic and non-odontogenic) and inflammatory. Cysts without epithelial lining: simple (traumatic, hemorrhagic) and aneurysmal. Cysts are dysontogenetic and acquired. Morphological characteristic. Benign and malignant tumors of the jaw bones, morphological characteristics.

13.	<p>DE-13 Odontogenic tumors. Tumors of the salivary glands. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>Odontogenic tumors, classification. Ameloblastoma, malignant ameloblastoma; morphological characteristic. Hard and soft odontomas, varieties, morphological characteristics. Classification of salivary gland tumors. Morphological characteristics of epithelial, mesenchymal tumors of the salivary glands. Tumor-like processes of the salivary glands, morphological characteristics.</p>
14.	<p>DE-14 Non-tumor diseases of the salivary glands. Sjögren's disease and syndrome. Mumps. Non-tumor diseases of the mucous membrane, organs of the oral cavity. Malformations of the development of the</p>	<p>General characteristics of non-tumor diseases of the mucous membrane and soft tissues of the oral cavity. Traumatic injuries. Reasons: physical and chemical factors. Manifestations. bacterial infections. Viral infections. mycotic diseases. General characteristics. Acute ulcerative necrotic gingivitis. Etiology, pathogenesis, pathological anatomy. Actinomycosis. Etiology, pathogenesis, pathological anatomy. The defeat of the mucous membrane of the mouth with syphilis, tuberculosis, scarlet</p>
	<p>maxillofacial area. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>fever and leprosy. Lesions of the oral mucosa in infectious mononucleosis, measles, chickenpox, herpes zoster, pre-AIDS and AIDS. Candidiasis. Clinical and anatomical forms of candidiasis of the oral mucosa. Hairy tongue. Recurrent aphthous stomatitis. Behçet's syndrome Diseases accompanied by keratosis. General characteristics. Lichen planus. Etiology, pathogenesis, pathological anatomy. Lichen planus as a precancerous condition. Leukoplakia. Etiology, pathogenesis, pathological anatomy. Leukoplakia as a precancerous condition. Salivary stone disease. Etiology, pathogenesis, pathological anatomy. bacterial infections. Viral infections. Salivary glands. Etiology, pathogenesis, pathological anatomy, complications, outcomes. Angina. Congenital anomalies (malformations) of the face, jaws, lips, tongue, oral mucosa, salivary glands, teeth, neck.</p>
15.	<p>DE-15 Caries. Pulpitis. Periodontitis. Periodontal disease. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>Caries. Epidemiology. Etiology, pathogenesis, pathological anatomy. Morphogenesis of the carious process. Outcomes. Complications. Other lesions of the hard tissues of the teeth: increased abrasion, grinding, erosion. Pulpitis. Periodontitis. Gingivitis. Periodontitis. Periodontitis. Etiology, pathogenesis. Kinds. Morphological characteristics, classification. Outcomes. Complications.</p>

16.	DE-16 Osteomyelitis of the jaw bones. Sepsis. Odontogenic sepsis. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	Osteomyelitis of the jaw bones, etiology, pathogenesis, pathological anatomy, outcomes, complications Sepsis as a special form of infection development. Sepsis and systemic inflammatory response syndrome (SIRS). Modern ideas about etiology and pathogenesis. Epidemiology. Classification (etiology, according to the localization of the entrance gate, clinical and morphological forms): septicemia, septicopyemia, septic (infectious) endocarditis. Organopathology. Septic shock. Causes of death. Iatrogenic pathology - catheterization sepsis. Dental sepsis, classification, morphological characteristics.
17.	DE-17 Tuberculosis. Syphilis. Actinomycosis. Changes in the maxillofacial region. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	Tuberculosis. Epidemiology, etiology, biological characteristics of the pathogen. Patho- and morphogenesis. Pathomorphosis, its phases. Complications, outcomes. VCG infection Morphology of tuberculoma. Classification: primary, hematogenous, secondary. Primary tuberculosis complex and variants of its development. Secondary form of tuberculosis: infiltrative, focal, tuberculoma, caseous pneumonia, cavernous, fibrous-cavernous, disseminated, cirrhotic. Extrapulmonary tuberculosis. Interdependence of HIV infection and tuberculosis. Syphilis: classification. Congenital and acquired syphilis (primary, secondary, tertiary). Etiology, patho- and morphogenesis, clinical and morphological characteristics, complications, outcomes, causes of death. Orofacial lesion. Actinomycosis. Orofacial lesion.
18.	DE-18	Infection. Definition. Taxonomic classification of infectious
	Infectious diseases, general characteristics. SARS. HIV infection. The defeat of the CHLO. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	agents. Methods for their detection in biological material. General characteristics of the infectious process. Variants of local and general reactions. Disease outcomes. Infections affecting mainly the respiratory organs. Influenza and acute respiratory viral infections (ARVI) - parainfluenza, respiratory syncytial and adenovirus infections. HIV infection. Acquired immunodeficiency syndrome (AIDS). Epidemiology, transmission routes, risk groups, etiology, clinical and morphological characteristics, complications, outcomes, causes of death. Patho- and morphogenesis. AIDS-associated indicator diseases: opportunistic infections, tumors (Kaposi's sarcoma, malignant B-cell lymphoma). Complications. Causes of death.
Disciplinary module 3. Private pathological anatomy (DE 19-25)		

<p>19.</p>	<p>DE-19 Arteriosclerosis. Hypertension. Ischemic heart disease. Cerebrovascular diseases. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>Atherosclerosis and arteriosclerosis. General data (epidemiology, risk factors). Modern ideas about the etiology and pathogenesis of atherosclerosis. Morphological characteristic.</p> <p>Hypertension, general data (epidemiology, diagnostic criteria). Essential hypertension.</p> <p>Hypertension: risk factors, causes of development, pathogenesis, morphological changes in the vessels and heart.</p> <p>Aneurysms and dissections of the arteries. Aneurysms: classification, significance, morphology, clinical syndromes, complications.</p> <p>Congestive heart failure: etiology, patho- and morphogenesis.</p> <p>Ischemic heart disease (coronary disease). cerebrovascular disease. Epidemiology, classification, background diseases and risk factors. Clinical manifestations, causes, pathogenesis. Morphological classification and characteristics, outcome, clinical significance, complications.. Brain damage during ischemia. Cerebral infarction. Hemorrhages in the brain: intracranial hematoma, subarachnoid hemorrhage, intraventricular.</p>
<p>20.</p>	<p>DE-20 Rheumatic diseases, general characteristics. Rheumatism. Heart defects. Morphology of heart failure. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>General principles for the classification of connective tissue diseases of non-infectious and infectious etiology. Etiology, classification, patho- and morphogenesis, morphological characteristics and diagnostic methods, clinical symptoms and syndromes, prognosis. Complications, outcomes.</p> <p>"Large" collagenoses - rheumatism: endocarditis, myocarditis, pericarditis, carditis and pancarditis, systemic lupus erythematosus (SLE), rheumatoid arthritis, polyarteritis nodosa, ankylosing spondylitis, scleroderma, dermatomyositis.</p> <p>"Small" collagenosis - Reiter's syndrome, Wegener's granulomatosis, Bechterew's disease. General characteristics of "small" collagenoses.</p> <p>General characteristics of morphological changes in systemic connective tissue diseases. Phases of systemic disorganization of the connective tissue and the walls of the vessels of the microvasculature.</p> <p>Heart defects. Congestive heart failure.</p>

21.	<p>DE-21 Respiratory diseases. Pneumonia. Chronic nonspecific lung diseases. Morphology of respiratory failure. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>Morphofunctional characteristics of the respiratory system. Pneumonia. Classification. Focal pneumonia (bronchopneumonia). Lobar (croupous pneumonia). Nosocomial pneumonia. COPD: lung abscess, atelectasis, emphysema, chronic obstructive bronchitis, bronchial asthma, bronchiectasis and bronchiectasis. Tumors of the lungs. Principles of classification. Morphology of respiratory failure.</p>
22.	<p>DE-22 Diseases of the digestive system. Gastritis. Peptic ulcer, tumors of the stomach. Appendicitis. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>Morphofunctional characteristics of the digestive system. Diseases of the stomach. Gastritis. Definition. Acute gastritis. Chronic gastritis, the essence of the process. Etiology, pathogenesis. The role of the microbial factor (<i>Helicobacter pylori</i>). Principles of classification. Sydney classification (19...d). Chronic gastritis as a precancerous condition. Ulcer disease. Definition. General characteristics of ulcers of different localizations. Morphological characteristics of chronic ulcers during exacerbation and remission. Complications, outcomes. Acute gastric ulcers: etiology, pathogenesis, morphological characteristics, outcomes. Tumors of the stomach. Classification. Benign, malignant tumors of the stomach. Appendicitis. Classification, etiology, classification. Morphological characteristics of appendicitis. Complications.</p>
23.	<p>DE-23 Diseases of the liver. Hepatosis. Hepatitis. Cirrhosis. Tumors of the liver. Morphology of liver failure. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>Morphofunctional characteristics of the digestive glands. Principles of classification. Hepatosis. Obesity of the liver parenchyma. Hepatitis: definition, classification. Acute viral hepatitis. chronic hepatitis. Cirrhosis of the liver. Pathological signs and morphological classification of cirrhosis. Etiological classification of cirrhosis. Clinical and morphological characteristics of the most important types of cirrhosis. Jaundice. Tumors of the liver. Primary tumors and secondary metastatic lesions of the liver.</p>
24.	<p>DE-24 Diseases of the kidneys. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>Etiology, pathogenesis, morphological characteristics, outcomes. General principles for the classification of kidney diseases. Glomerular kidney disease: glomerulopathies and glomerulonephritis. nephrotic syndrome. membranous nephropathy. Lipoid nephrosis. Focal segmental glomerulosclerosis. IgA nephropathy. Focal proliferative and necrotizing glomerulonephritis. Uremia. Tubulopathy. Acute tubular tubular necrosis, Tubulointerstitial nephritis. Pyelonephritis and urinary tract infections. Acute and chronic renal failure - a comparative characteristic. Urolithiasis (kidney stones). Tumors of the kidneys. Congenital anomalies of development.</p>

25.	DE-25 Diseases of the endocrine glands OK-1, 5, 8, GPC-1, 2, 4, .5, 6, 9, PC-5, 6, 17, 18	<p>Definition, causes, Epidemiology, pathogenesis, Classification. Clinical and morphological characteristics of GI diseases. Diseases of the pituitary gland. Diseases of the thyroid gland. classification. Goiter - definition, the state of the function of the gland. Thyrotoxicosis (hyperthyroidism). Graves' disease (diffuse toxic goiter, Basedow's disease. Hypothyroidism. Hashimoto's</p>
		<p>thyroiditis. Endemic goiter. Tumors of the thyroid gland. Diseases of the parathyroid glands. Diseases of the adrenal cortex: Cushing's syndrome, hyperaldosteronism, adrenogenital syndromes, Addison's disease. Hormonally non-functioning tumors of the adrenal glands (adenomas, cancer)) Diseases of the adrenal medulla Pheochromocytoma.</p> <p>Diabetes. Morphological characteristic. Metabolic disorders. Outcomes. Complications. Causes of death in diabetes mellitus.</p>

6.2. Supervised Learning Elements

Name of the category (group) of competence	Code and name of competence	Code and name of the indicator of achievement of competence	Didactic unit	Controlled ZUN, aimed at the formation of general cultural and professional competencies			Competence development stage
				Know (formulation of knowledge and GPC instruction)	Be able to (wording skills and guidance OPK)	Own (wording skills and guidance OPK)	
Fundamentals of fundamental and natural science knowledge	OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3. Able to assess morphofunctional states and pathological processes in the human body to solve professional problems	IOPC-9: IOPC-9.1, IOPC-9.2, IOPC-9.3.1 Knows: anatomy, histology, embryology, topographic anatomy, physiology, pathological anatomy and physiology of human organs and systems	DE1 Introduction to pathological anatomy. The history of the development of pathological anatomy. Content, tasks, methods of studying pathological anatomy. Pathology service.	- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- work with magnifying equipment (microscope); OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- medical-functional conceptual apparatus. - the ability to recognize macro and micro changes in tissues and organs in a given pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	elementary
			DE2 Apoptosis. Necrosis. Death, posthumous changes	- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body during death, necrosis and apoptosis; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns during necrosis, apoptosis - differentiate various forms of necrosis on micro and macro preparations - differentiate necrosis and apoptosis on micro and macro preparations OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- medical-functional conceptual apparatus. - the ability to recognize macro and micro changes in tissues and organs in a given pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	
		ms IOPC 9.2 Able to: evaluate		- anatomical-physiological, age-sex and individual features of the structure and development of the	- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the	- medical-functional conceptual apparatus. - the ability to	

		ate the basic morphological and functional data, physiological conditions and pathological processes in the human body IOPC 9.3 Has practical experience: assessment of	DE 3	Dystrophy - reversible damage (parenchymal, stromal-vascular)	human body; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this pathological process - to differentiate on micro and macro preparations in this pathological process - to differentiate on micro and macro preparations in this pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	recognize macro and micro changes in tissues and organs in a given pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	
			DE 4 5	Mixed dystrophies . Blood and lymph circulation disorders.	- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this pathological process - to differentiate on micro and macro preparations in this pathological process - to differentiate on micro and macro preparations in this pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- medical-functional conceptual apparatus. - the ability to recognize macro and micro changes in tissues and organs in a given pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	
		basic morphological and functional data, physiological conditions and pathological processes in the huma	DE 6	Inflammation	- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this pathological process - to differentiate on micro and macro preparations in this pathological process - to differentiate on micro and macro preparations in this pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- medical-functional conceptual apparatus. - the ability to recognize macro and micro changes in tissues and organs in a given pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	

		n body when solvi ng profe ssion al probl ems	D E 7	immunopat hological processes. Regenerati on. Processes of adaptation and compensati on. Wound healing. Sclerosis.	- anatomical- physiological, age-sex and individual features of the structure and development of the human body; - functional systems of the human body, their regulation and self- regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this pathological process - to differentiate on micro and macro preparations in this pathological process - to differentiate on micro and macro preparations in this pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	- medical- functional conceptual apparatus. - the ability to recognize macro and micro changes in tissues and organs in a given pathological process OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3	
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			DE8-9-101112	Tumors	<ul style="list-style-type: none"> - anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this pathological process - to differentiate on micro and macro preparations in this pathological process - to differentiate on micro and macro preparations in this pathological process <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - medical-functional conceptual apparatus; - the ability to recognize macro and micro changes in tissues and organs in a given pathological process <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>
			DE13	Nosology, diagnosis. Disease. ICD-10. Hemoblastosis.	<ul style="list-style-type: none"> - anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> structurally formulate a clinical and pathoanatomical diagnosis - give a conclusion and formulate a pathoanatomical diagnosis; complete a medical certificate of death; - work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>

			<p>Non-tumor diseases of the salivary glands. Sjögren's disease and syndrome. Mumps. Non-tumor diseases of the mucous membrane, organs of the oral cavity. Malformations of the development of the maxillofacial area.</p>	<p>- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases</p>	<p>- medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	
			<p>Caries. Pulpitis. Periodontitis. Periodontal disease.</p>	<p>- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	

				<p>Osteomyelitis of the jaw bones. Sepsis. Odontogenic sepsis.</p>	<p>- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	
				<p>Tuberculosis. Syphilis. Actinomycosis. Changes in the maxillofacial region.</p>	<p>- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	

				<p>Infectious diseases, general characteristics. SARS. HIV infection. The defeat of the CHLO.</p>	<p>- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	
				<p>Arteriolosclerosis. Arterial hypertension. ischemic heart disease. TsVB.</p>	<p>- anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	

			DE20	Rheumatic diseases	<p>- anatomical-physiological, age-sex and individual features of the structure and development of the human body;</p> <p>- the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology;</p> <p>- functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes.</p> <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- work with magnifying equipment (microscope);</p> <p>- assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process;</p> <p>- describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases</p> <p>- to differentiate on micro and macro preparations for this group of diseases</p> <p>- to differentiate on micro and macro preparations for this group of diseases</p> <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- medical-functional conceptual apparatus;</p> <p>- ability to recognize macro and micro changes in tissues and organs in this group of diseases</p> <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	
			DE21	Respiratory diseases	<p>- anatomical-physiological, age-sex and individual features of the structure and development of the human body;</p> <p>- the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology;</p> <p>- functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes.</p> <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- work with magnifying equipment (microscope);</p> <p>- assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process;</p> <p>- describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases</p> <p>- to differentiate on micro and macro preparations for this group of diseases</p> <p>- to differentiate on micro and macro preparations for this group of diseases</p> <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<p>- medical-functional conceptual apparatus;</p> <p>- ability to recognize macro and micro changes in tissues and organs in this group of diseases</p> <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	

			DE22	<p>Diseases of the digestive system</p>	<ul style="list-style-type: none"> - anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	
			DE23	<p>Diseases of the liver.</p>	<ul style="list-style-type: none"> - anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	

			DE 24	kidney disease	<ul style="list-style-type: none"> - anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	
			DE 25	Diseases of the endocrine glands	<ul style="list-style-type: none"> - anatomical-physiological, age-sex and individual features of the structure and development of the human body; - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, the principles of classification of diseases; basic concepts of general nosology; - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes. <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - work with magnifying equipment (microscope); - assess the histophysiological state of the main cellular, tissue and organ structures of the body in this pathological process; - describe the morphological changes in the studied macroscopic, microscopic preparations and electron diffraction patterns in this group of diseases - to differentiate on micro and macro preparations for this group of diseases - to differentiate on micro and macro preparations for this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	<ul style="list-style-type: none"> - medical-functional conceptual apparatus; - ability to recognize macro and micro changes in tissues and organs in this group of diseases <p>OPK-9: IOPC-9.1, IOPC-9.2, IOPC-9.3</p>	

6.3. Sections of disciplines (DE) and types of classes

Section of discipline, DE	Hours by activity			
	Lectures	Pr. zan.	Sam.r.s.	Total

DE 12: Tumors of melanin-forming tissue. Tumor-like processes of the jaw bones.	2	2	2	
syndrome. Mumps. Non-tumor diseases of the mucous membrane, organs of the oral cavity. Malformations of the development of the maxillofacial area.				
DE 15: Caries. Pulpitis. Periodontitis. Periodontal disease.	2	2	2	
DE 16: Osteomyelitis of the jaw bones. Sepsis. Odontogenic sepsis.	2	2	2	
DE 17: Tuberculosis. Syphilis. Changes in the maxillofacial region.	2	2	2	
DE 18: Infectious diseases, general characteristics. SARS. HIV infection. The defeat of the CHLO.	2	2	2	
Module 3: DE 19: Arteriosclerosis. Hypertension. Ischemic heart disease. Cerebrovascular diseases.	1	2	2	
DE 20: Rheumatic diseases, general characteristics. Rheumatism. Heart defects. Morphology of heart failure.	1	2	2	
DE 21: Diseases of the respiratory system. Pneumonia. Chronic nonspecific lung diseases. Morphology of respiratory failure.	2	2	2	
DE 22: Diseases of the digestive system. Gastritis. Peptic ulcer, tumors of the stomach. Appendicitis.	1	2	2	
DE 23: Diseases of the liver. Hepatosis. Hepatitis. Cirrhosis. Tumors of the liver. Morphology of liver failure.	1	2	2	
DE 24: Diseases of the kidneys.				
DE 25: Diseases of the endocrine glands				
		2	1	
		2	1	
EXAM 27				
TOTAL	34	72	47	180

7. EXAMPLE TOPICS

7.1. Course (control) works: provided by the curriculum

7.2. Educational research works (performance educational and research work is provided for in the work program of the discipline "Pathological anatomy, including pathological anatomy of the head and neck" in order to enable students to increase their final rating in the discipline within the point-rating system: in order to gain missing points, in order to receive bonus points, etc., as part of admission to the credit lesson in the disciplinary module "Pathological anatomy of the head and neck", as well as an integral part of research work within the framework of the morphological section of NOMUS USMU:

1. Clinical and morphological characteristics of tumors of the salivary glands (according to the clinic of maxillofacial surgery and the laboratory of clinical pathomorphology of the State Healthcare Institution "OKB No. 1").

2. Clinical and morphological characteristics of cysts of the jaw bones (according to the clinic of maxillofacial surgery and the laboratory of clinical pathomorphology of the State Budgetary Institution of Health "OKB No. 1").
3. Clinical and morphological characteristics of odontogenic tumors (according to the clinic of maxillofacial surgery and the laboratory of clinical pathomorphology, OKB No. 1).
4. Clinical and morphological characteristics of non-tumor diseases of the orofacial region and neck (according to the clinic of maxillofacial surgery and the laboratory of clinical pathomorphology of the State Healthcare Institution "OKB No. 1").
5. Features of the morphological structure of tumors of the salivary glands (according to the clinic of maxillofacial surgery and the laboratory of clinical pathomorphology of the State Health Institution "OKB No. 1").

7.3. Abstracts (the performance of abstract works is provided for in the work program of the discipline "Pathological anatomy, including pathological anatomy of the head and neck" in order to enable students to increase their final rating in the discipline within the point-rating system: in order to gain missing points, in order to receive bonus points ", as well as an integral part of research work within the framework of the activities of the morphological section of the NOMUS USMU, etc.)::

1. Signs of death and post-mortem changes.
2. Diagnostic possibilities of IHC in modern oncomorphology.
3. Anomalies (malformations) of the orofacial area.
4. Complications and outcomes of non-communicable diseases of the orofacial region.
5. Features of the course of pathological processes in the orofacial region in children.

8. RESOURCE PROVISION

The department has human resources that guarantee the quality of specialist training in accordance with the requirements of the Federal State Educational Standard of Higher Education, specialty 31.05.03 Dentistry.

8.1. Educational technologies

The proportion of classes conducted in an interactive form is 50%. The educational process uses lectures, practical exercises, situational tasks and test control tasks for practical classes, students performing educational and research and research work, developing manual skills in the methodology of working with dental materials and writing tests with situational tasks.

To implement a competency-based approach in the study of the discipline "Pathological anatomy, clinical pathological anatomy", up to 30-50% of the time allotted for classroom classes is carried out using interactive and active forms of conducting classes:

- dialogues: student-student-teacher; student-teacher, etc.
- discussions
- survey with justification of answers
- reviewing responses
- mutual verification of diagnostics of macro-, micro preparations and electron diffraction patterns
- solving situational problems,
- computer simulations of changes at the organismal, organ, tissue, cellular, subcellular levels in various pathological processes and diseases,
- business, situational-role-playing games with modeling of clinical-anatomical, clinical-morphological conferences, etc.

For the purpose of professional development of students and the development of the skills and abilities provided for by the Federal State Educational Standard, classroom classes are held in combination with extracurricular work.

The study and use of modern scientific achievements, incl. and foreign ones allow to increase the level of teaching, as well as the introduction of new methods of teaching the discipline "Pathological Anatomy, Clinical Pathological Anatomy".

To ensure the development of discipline the following means are used:

- demonstration models (micro and macro preparations);
- photographs;
- thematic tables;
- presentations;
- video films;
- computer programs;
- educational literature;
- methodological recommendations, training tasks;
- Handout;
- master classes of teachers of the department;
- educational and research conferences;
- round tables.

For the implementation of the educational process are used

The classrooms are equipped with microscopes with stationary illumination, sets of micro- and macropreparations, and thematic tables.

Mastering the discipline takes place with the help of two main types of educational work: lectures and practical exercises. Lectures are given by professors and associate professors of the department using traditional and modern material. The clarity of the presentation is provided by multimedia presentations.

Practical classes are held in the training rooms of the Department of Pathological Anatomy of USMU. The teacher, using tests, solving situational problems and a survey, evaluates the theoretical preparation of the student. In practical classes, the student, under the supervision of assistants, associate professors, describes macro-preparations and formulates conclusions on them, microscopically, with the definition of essential elements, and sketches histological preparations in a notebook for practical classes, solves situational problems, studies thematic tables.

The student fills in a notebook for practical exercises with a sketch of histological preparations and a description of macropreparations with the formulation of conclusions on them.

Great importance in practical classes is given to solving situational problems. To broaden their horizons, students are recommended abstract work with additional literature, viewing slides and videos representing various technologies and methods, participation in SSS, UIRS, scientific and practical conferences and exhibitions.

Implementation of the competency-based approach provides for the widespread use in the educational process of active and interactive forms of conducting classes (computer simulations, business and role-playing games, analysis of specific situations) in combination with extracurricular work in order to professionally educate students and develop skills. The study and use of modern scientific achievements and foreign experience will improve the level of teaching.

Control of knowledge acquisition is carried out regularly in practical classes: in the form of a survey with substantiation of answers, discussions, solving situational problems, conducting situational role-playing games, performing tasks in a test form (including visualized ones), tests for the diagnosis of macro- and micro-drugs, coursework defenses. At the end of the study of the discipline, a differentiated test is provided. The results of the evaluation of the acquired knowledge are reflected in educational journals, student's record book, examination sheets.

Electronic information and educational environment: educational, educational and methodological information is presented on the educational portal <http://educa.usma.ru>, all students have access to electronic educational resources (electronic catalog and electronic library of the university, ELS "Student Consultant").

To evaluate educational achievements, a BRS has been developed, current and final test controls, and a test are carried out.

8.2. Logistics

№	Equipment name	Quantity PC.
1.	Notebooks	4
2.	Multimedia projector ToshibaTDR-S35, NESNP200	2
3.	Slide projector KindermannSilent 1500	1
4.	Touring overhead projector	1
5.	Air cleaner "Super-Plus-Turbo"	1
6.	Information stands	7
7.	Microscopes Olympus CX31	3
8.	Microscopes Biomed 5	40
9.	Microscopes "Mikmed-1/1"	25
10.	Microscopes "Bimam"	25
11.	Microscopes Olympus CX41	1
12.	Primo Star Microscopes	10
13.	Monoblocks Powercool	3
14.	Pull out drobe	1
15.	MFP CANON	1
16.	LaserJet printer	2
17.	Wet preparations of organs and organocomplexes, sets of histological preparations with changes characteristic of lesions of organs and tissues in various pathological processes and diseases.	Over 1000
18.	Teaching aids, Study assignments, test assignments.	Over 1000

8.3. List of licensed software

- 8.3.1. List of licensed software
- 8.3.1.1. System software
- 8.3.1.1.1. Server software:
 - - VMwarevCenterServer 5 Standard, license term: unlimited; VMwarevSphere 5 EnterprisePlus, license term: perpetual, contract No. 31502097527 dated March 30, 2015 LLC Krona-KS;
 - - Windows Server 2003 Standard No. 41964863 dated March 26, 2007, No. 43143029 dated December 5, 2007, license validity period: unlimited;

- - Windows Server 2019 Standard (32 cores), license agreement No. V9657951 dated 08/25/2020, license expiration date: 08/31/2023, Microsoft Corporation;
- - ExchangeServer 2007 Standard (License No. 42348959 dated June 26, 2007, license term: unlimited);
- - SQL ServerStandard 2005 (license no. 42348959 dated 06/26/2007, license term: unlimited);
- - CiscoCallManager v10.5 (contract No. 31401301256 dated July 22, 2014, license validity period: unlimited), Microtest LLC;
- - Ideco UTM Enterprise Edition Security Gateway (License No. 109907 dated November 24, 2020, license validity period: unlimited), IDECO LLC.
- **8.3.1.1.2. Operating systems of personal computers:**
- - Windows 7 Pro (OpenLicense No. 45853269 dated 09/02/2009, No. 46759882 dated 04/09/2010, No. 46962403 dated 05/28/2010, No. 47369625 dated 09/03/2010, No. 47849166 dated 12/21/2010, No. 47849165 of December 21, 2010, No. 48457468 dated 05/04/2011, No. 49117440 dated 10/25/2011, No. 49155878 dated 10/12/2011, No. 49472004 dated 12/20/2011), license validity period: unlimited);
- - Windows7 Starter (OpenLicense No. 46759882 of 04/09/2010, No. 49155878 of 10/12/2011, No. 49472004 of 12/20/2011, license validity period: unlimited);
- - Windows 8 (OpenLicense No. 61834837 dated 04/09/2010, license validity period: unlimited);
- - Windows 8 Pro (OpenLicense No. 61834837 dated 04/24/2013, No. 61293953 dated 12/17/2012, license validity period: unlimited);
- **8.3.1.2. Application software**
- **8.3.1.2.1. Office programs**
- - OfficeStandard 2007 (OpenLicense No. 43219400 dated 12/18/2007, No. 46299303 dated 12/21/2009, license validity period: unlimited);
- - OfficeProfessionalPlus 2007 (OpenLicense No. 42348959 dated 06/26/2007, No. 46299303 dated 12/21/2009, license validity period: unlimited);
- - OfficeStandard 2013 (OpenLicense No. 61293953 of December 17, 2012, No. 49472004 of December 20, 2011, No. 61822987 of April 22, 2013, No. 64496996 of December 12, 2014, No. 64914420 of 16. 03.2015, license validity period: unlimited);
- - Office 365 (No. 0405 dated 04.04.2023, license validity: after 04.12.2024)
- **8.3.1.2.2. Data processing programs, information systems**
- - Software "TANDEM.University" (including the educational portal educa.usma.ru) (license certificate No. UGMU / 21 dated 12/22/2021, license validity period: unlimited), Tandem IS LLC;
- - Software 1C: UNIVERSITY PROF (License No. 17690325, valid indefinitely, Automation Technologies LLC);
- - iSpring Suite software (No. 1102-1/353 dated 10/13/2022, license validity period: for 12 months);
- **8.3.1.2.3. Distance learning information systems**
- - Mirapolis HCM (No. 159/08/22-K dated 08/16/2022, license validity period: for 12 months).
- installation and adjustment agreement No. 670 of 03/01/2018 is valid indefinitely

9. EDUCATIONAL AND INFORMATION SUPPORT

9.1. Main literature

9.1.1. Electronic educational publications

1. Pathological anatomy. In 2 volumes: textbook / Ed. V.S. Paukov. - M. : GEOTAR-Media, 2019. -<http://www.studmedlib.ru/book/ISBN9785970437452.html>

2. Pathological anatomy: atlas [Electronic resource]: textbook. manual for students of medical universities and postgraduate education / [Zairatyants O. V. and others]; ed. O. V. Zairatyants. - M. : GEOTAR-Media, 2019. -<http://www.studmedlib.ru/book/ISBN9785970427804.html>

9.1.2. Electronic databases

1. Electronic library system "Student Advisor", access to kits: "Medicine. Healthcare. VO (basic kit)", "Medicine. Healthcare. VO (premium set)", "Medicine (VO) GEOTAR-Media. Books in English".

Link to resource:<https://www.studentlibrary.ru/>

STUDENT CONSULTANT LLC

License agreement No. 8/14 on granting a simple (non-exclusive) license to use the "Electronic Library System "Student Consultant" dated 06/23/2022. Valid until 08/31/2023.

2. Database "Doctor's Consultant. Electronic Medical Library».

Link to the resource: <https://www.rosmedlib.ru/>

OOO VSHOUZ-KMK

Contract No. 717KV/06-2022 of 10.08.2022.

Valid until 08/09/2023.

3. Electronic library system "Book Up"

Access to the "Big Medical Library"

collection. Link to the resource:

<https://www.books-up.ru/> Bukap LLC

Agreement No. BMB for the provision of free services for the placement of electronic publications dated 18.04.2022.

Valid until April 18, 2027.

4. Electronic library system "Book Up"

Access to a collection of anatomy study guides in English

Link to the resource: <https://www.books-up.ru/>

Bukap LLC

Sublicense contract No. 73 dated 03/06/2023.

Valid until March 31, 2024.

5. Electronic library system "Lan", access to the collection "Network Electronic Library" Link to resource: <https://e.lanbook.com/>

EBS LAN LLC

Contract No. SEB 1/2022 for the provision of services dated 01.11.2022.

Valid until: 12/31/2026.

6. Educational platform "Urayt"

Link to the resource: <https://urait.ru/>

OOO "Electronic Publishing House URAIT"

License agreement No. 10/14 dated 06/30/2022.

Valid until: 31.08.2023.

7. Electronic educational resource for foreign students "RUSSIAN AS A FOREIGN"

Link to resource:<https://www.ros-edu.ru/>

IP Company "IP Ar Media" LLC

License agreement No. 9580/22RKI/354 dated 10/13/2022

Valid until: 24.10.2022.

8. Electronic library USMU, institutional repository on the DSpace platform Link to resource: <http://elib.usma.ru/>

Regulations on the electronic library of the Federal State Budgetary Educational Institution of Higher Education USMU of the Ministry of Health of Russia, approved and put into effect by order of the rector of the Federal State Budgetary Educational Institution of Higher Education USMU of the Ministry of Health of Russia Kovtun O.P. dated 06/01/2022 No 212-r

Installation and configuration agreement No. 670 of 03/01/2018

Validity: unlimited

9. Universal database of electronic periodicals IVIS, access to an individual collection of scientific medical journals.

Link to resource: <https://dlib.eastview.com/basic/details>

LLC «IVIS»

License agreement No. 9/14 dated 06/23/2022.

Valid until 06/30/2023.

10. Centralized subscription

Springer Nature Electronic Resources:

- **Springer Journals database**, containing full-text journals from Springer in various fields of knowledge (issues of 2021).

Link to resource: <https://link.springer.com/>

- **Springer Journals Archive database**, containing full-text journals of the Springer publishing house in various fields of knowledge (archive of issues 1946 - 1996).

Link to resource: <https://link.springer.com/>

- **Nature Journal database**, containing full-text journals of the Nature Publishing Group - collections of Nature journals, Academic journals, Scientific American, Palgrave Macmillan (2021 editions).

Link to resource: <https://www.nature.com>

RFBR Letter No. 785 dated July 26, 2021 On granting licensed access to the contents of the Springer Nature database in 2021 on the basis of a centralized subscription.

Validity: unlimited

- **Springer Journals database**, containing full-text journals published by Springer (issues of 2022), collections: Medicine, Engineering, History, Law & Criminology, Business & Management, Physics & Astronomy.

Link to resource: <https://link.springer.com/>

- **Adis Journals database**, containing Springer Nature's Adis full-text journals in medicine and other related medical fields (2022 editions).

Link to resource: <https://link.springer.com/>

RFBR Letter No. 910 dated June 30, 2022 On granting licensed access to the contents of databases published by Springer Nature.

Validity: unlimited

- **Springer Journals database**, containing full-text journals published by Springer (issues of 2022), collections: Biomedical & Life Science, Chemistry & Materials Science, Computer Science, Earth & Environmental Science.

Link to resource: <https://link.springer.com/>

- **Nature Journal database**, containing the full-text journals of the Nature Publishing Group, namely the collection of Nature journals (issues of 2022).

Link to resource: <https://www.nature.com>

RFBR Letter No. 909 dated June 30, 2022 On granting licensed access to the contents of databases published by Springer Nature.

Validity: unlimited

- **Springer Journals database**, containing full-text journals published by Springer (issues of 2022), collections: Architecture and Design, Behavioral Science & Psychology, Education, Economics and Finance, Literature, Cultural & Media Studies, Mathematics & Statistic.

Link to resource: <https://link.springer.com/>

- **Nature Journal database**, containing Nature Publishing Group full-text journals, Academic journals collection, Scientific American, Palgrave Macmillan (2022 editions).

Links to resources: 1. <https://www.nature.com>; 2. <https://link.springer.com>

RFBR Letter No. 1065 dated August 08, 2022 On granting licensed access to the content of databases published by Springer Nature.

Validity: unlimited

- **eBook Collections database** (i.e.2020 eBook collections) from Springer Nature - Springer Nature Customer Service Center GmbH.
Link to resource:<https://link.springer.com/>
RFBR Letter No. 965 dated September 17, 2021 On granting licensed access to the contents of the Springer eBook Collections database published by Springer Nature in 2021.
Validity: unlimited
- **eBook Collections database** (i.e.2021 eBook collections) from Springer Nature - Springer Nature Customer Service Center GmbH.
Link to resource:<https://link.springer.com/>
RFBR Letter No. 1045 dated August 2, 2022 On granting licensed access to the contents of the Springer Nature eBook Collections database.
Validity: unlimited
- **eBook Collections database** (i.e.2022 eBook collections) from Springer Nature - Springer Nature Customer Service Center GmbH.
Link to resource:<https://link.springer.com/>
RFBR Letter No. 1082 dated August 11, 2022 On granting licensed access to the contents of the Springer Nature eBook Collections database.
Validity: unlimited
- **eBook Collections database** (i.e.2023 eBook collections) published by Springer Nature Customer Service Center GmbH.
Link to resource:<https://link.springer.com/>
Letter No. 1947 of December 29, 2022 from the Russian Center for Research on granting licensed access to the contents of the Springer eBook Collections database published by Springer Nature in 2023 on the basis of a centralized subscription.
Validity: unlimited
- **Springer Journals database**, containing full-text journals published by Springer (published in 2023), namely the thematic collection of Life Sciences Package.
Link to resource:<https://link.springer.com/>
Validity: unlimited
- **Nature Journal database**, containing the full-text journals of the Nature Publishing Group, namely the journals Nature journals, Academic journals, Scientific American (published in 2023) of the thematic collection Life Sciences Package.
Link to resource:<https://www.nature.com>
Validity: unlimited
- **Adis database Journals**, containing full-text journals from Springer Nature, namely the Adis journals (published in 2023) of the thematic collection Life Sciences Package.
Link to resource:<https://link.springer.com/>
Validity: unlimited
- **Springer Materials database**
Link to resource:<https://materials.springer.com>
Valid until 29.12.2023
Letter from RCNI No. 1948 dated December 29, 2022 On granting licensed access to the contents of Springer Nature databases in 2023 on the basis of a centralized subscription.
- **Springer Journals database**, containing full-text journals published by Springer (published in 2023), namely the thematic collection of the Social Sciences Package.
Link to resource:<https://link.springer.com/>
Validity: unlimited
- **Nature Journal database**, containing the full-text journals of the Nature Publishing Group, namely the Palgrave Macmillan journals (published in 2023) of the thematic collection of the Social Sciences Package.
Link to resource:<https://link.springer.com/>
Validity: unlimited

resource:<https://www.nature.com>
Validity: unlimited

- **database** *Springer Nature Protocols and Methods*

Link to

resource: <https://experiments.springernature.com> Valid

until 29.12.2023

Letter No. 1949 dated December 29, 2022 from the Russian Center for Research on granting licensed access to the contents of the databases of the Springer Nature publishing house in 2023 on the basis of a centralized subscription.

- **Springer Journals database**, containing full-text journals published by Springer (published in 2023), namely the thematic collections of the Physical Sciences & Engineering Package.

Link to resource: <https://link.springer.com/>

- **Nature Journal database**, containing the full-text journals of the Nature Publishing Group, namely the journals Nature journals (published in 2023) of the thematic collection Physical Sciences & Engineering Package.

Link to resource: <https://www.nature.com>

Letter from RCNI dated December 29, 2022, No. 1950 On granting licensed access to the content of the databases of the Springer Nature publishing house in 2023 on the basis of a centralized subscription.

Validity: unlimited

12. The Cochrane Library database John Wiley & Sons, Inc.

Link to resource: <https://www.cochranelibrary.com>

Letter No. 613 dated April 14, 2023 from the Russian Center for Research on granting licensed access to the content of The Cochrane Library database published by John Wiley & Sons, Inc. in 2023 on a centralized subscription basis.

Valid until 31.07.2023

13. Electronic version of the journal "Quantum Electronics"

Link to resource: <https://quantum-electron.lebedev.ru/arhiv/>

Letter No. 1871 dated December 22, 2022 from the Russian Center for Research and Development on granting licensed access to the electronic version of the Quantum Electronics journal in 2022 on the basis of a centralized subscription.

Validity: unlimited

14. Lippincott Williams and Wilkins Archive Journals database of Ovid Technologies GmbH

Link to resource: <https://ovidsp.ovid.com/autologin.cgi>

Letter No. 1870 dated December 22, 2022 from the Russian Center for Research and Development on granting licensed access to the content of the Lippincott Williams and Wilkins Archive Journals database published by Ovid Technologies GmbH in 2022 on the basis of a centralized subscription.

Validity: unlimited

15. Questel SAS Orbit Premium edition patent search database

Link to resource: <https://www.orbit.com>

Letter from RCNI dated December 30, 2022 No. 1955 On granting licensed access to the content of Questel SAS databases in 2023 on the basis of a centralized subscription.

Valid until 30.06.2023

16. The Wiley Journal Database published by John Wiley & Sons, Inc.

Link to resource: <https://onlinelibrary.wiley.com>

Letter from RCNI dated April 7, 2023 No. 574 On granting licensed access to the content of databases published by John Wiley & Sons, Inc. in 2023 on a centralized subscription basis.

- Full-text collection of journals containing issues for 2019 - 2022

Valid until 30.06.2023

- Full text collection of magazines containing issues for 2023 Validity: indefinite.

9.1.3 Tutorials:

1. Pathological anatomy. In 2 volumes: textbook / Ed. V.S. Paukov. - M. : GEOTAR-Media, 2019.
2. Pathological anatomy: atlas: textbook. manual for students of medical universities and postgraduate education / [Zairatyants O. V. and others]; ed. O. V. Zairatyants. - M. : GEOTAR-Media, 2019.

9.2. additional literature

9.2.1. Literature for in-depth study, preparation of abstracts

1. Zinoviev A.S., Kononov A.V., Kosterina L.D. "Clinical pathology of the orofacial region and neck". - Omsk. - 1999. - 151 p.
2. Fingers. M.A., Zairatyants O.V., Kononov A.V., Rybakova M.G. Guide to practical exercises in pathological anatomy for dental faculties. - M: Medicine "Shiko". - 2009. - 592 p.
3. Fingers M.A., Anichkov N.M. Pathological anatomy. - M: "Medicine". - 2000. - In 2 volumes.
4. Pathology. Edited by M.A. Paltseva, V.S. Paukov. – M: GEOTAR-Media. - 2008. - In 2 volumes.
5. Paltsev M.A., Kovalenko V.L., Anichkov N.M. Guide to the sectional biopsy course. - M: "Medicine". - 2002. - 256 p.

10. DISCIPLINE CERTIFICATION

The attestation of students is carried out in accordance with the developed point-rating system for evaluating the educational achievements of students in the discipline. The final attestation for the discipline is carried out in the form of an exam. Students who have fully mastered the program of the discipline and are certified in practical skills (at least 40 rating points) are allowed to take the exam.

11. DISCIPLINE EVALUATION FUND

The fund of assessment tools for the discipline for conducting intermediate certification is presented in Appendix No. 1 to the RPD.