FEDERAL STATE BUDGETARY
EDUCATIONAL INSTITUTION OF HIGHER EDUCATION
"AMUR STATE MEDICAL ACADEMY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

AGREED
Vice-Rector for Academic Affairs,

_____N.V. Loskutova

April17, 2025

Decision of the CCMC
April17, 2025

Protocol No. 7

APPROVED
by decision of the Academic Council of the FSBEI HE Amur SMA of the Ministry of Health of the Russian Federation
April 22, 2025

Protocol No. 15

Acting Rector of the FSBEI HE Amur SMA of the Ministry of Health of the Russian Federation

_____I.V. Zhukovets

April 22, 2025

ДОКУМЕНТ ПОДПИСАН
ЭЛЕКТРОННОЙ ПОДПИСЬЮ

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EDUCATIONAL PROGRAM

disciplines "Pathological Anatomy, Clinical Pathological Anatomy"

Specialty: 31.05.01General Medicine
Course: 3, 4
Semester: 5-6, 7
Total hours: 324 hrs.
Total credits: 9 credit units
Control form: examination, 6 semester
credit – test, 7semester

Blagoveshchensk, 2025

The educational program of the discipline is designed in accordance with the requirements of the Federal State Educational Standard of Higher Education - specialist in specialty 31.05.01 General Medicine, approved by the order of the Ministry of Education and Science of Russia dated 08.12.2020 No. 988 (registered with the Ministry of Justice of Russia on 08.26.2020 No. 59493), BPEP HE (2021).

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April 17, 2025

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I. EXPLANATORY NOTE

1.1.CHARACTERISTICS OF THE DISCIPLINE

Pathological anatomy as an independent science occupies one of the central places among medical and biological disciplines and, according to the Federal State Educational Standard of Higher Education (FGOS VO), is included in the basic part of disciplines for graduates of the medical faculty of medical universities. This program involves the study of pathological anatomy, taking into account the achievements of histology, morphology, biology, on the one hand, and the needs of theoretical and practical medicine (surgery, oncology, obstetrics, therapy, etc.), on the other. When presenting the lecture course of the discipline, the connection between the topics and sections of the program is emphasized, while ensuring the perception of the discipline as a single holistic science. The subject is taught from the perspective of the current level of achievements in morphology, morphophysiology and clinic. In teaching the subject, medical and social features of the region of Siberia and the Far East are emphasized, where most graduates will have to work in the future. Teaching of pathological anatomy is based on the generalization of scientific material using the achievements of medicine, biology, genetics, immunomorphology, chemistry and physics, as well as data from modern morphological research (electron microscopy, immunohistochemistry, histochemistry). Training is conducted taking into account the development of higher education, aimed at strengthening the creative and research nature of studying the discipline.

The working program of the discipline consists of two modules:

module 1 – pathological anatomy, **module 2**-clinical pathological anatomy.

Classes in pathological anatomy are held in 5-6 semesters: 102 hours of practical training and 42 hours of lectures. Classes in clinical pathological anatomy are held in the 7th semester: 34 hours of practical classes and 14 hours of lectures.

In the 6th semester, an exam is held, and in the 7th semester, a test (final knowledge control) is held, consisting of a theoretical part and a practical part.

1.2. GOALS AND OBJECTIVES OF THE DISCIPLINE, ITS PLACE IN THE STRUCTURE OF THE MAIN PROFESSIONAL EDUCATIONAL PROGRAM OF HIGHER EDUCATION

The purpose of teaching the discipline:

Study of the structural foundations of diseases, their etiology, mechanisms of development (pathogenesis) , principles of diagnosis. Study of morphological features of NA diseasesat different levels (organ, tissue, cellular, etc.). Comparison of morphological and clinical manifestations of diseases at all stages of their development. Mastering the methods of clinical and anatomical analysis of biopsy, surgical and sectional material, as well as the principles of diagnosis, familiarization with the structure and tasks of the pathoanatomical service.

Objectives of the discipline: Module "Pathological anatomy"

a) to study the pathology of the cell and general pathological processes, the totality of which determines the morphological manifestations of a particular disease;

b) to study the etiology, morphology of diseases at different stages of their development (morphogenesis), structural foundations of recovery, complications, outcomes and long-term consequences of diseases;

c) to study the etiology, morphology and mechanisms of development of adaptation processes and compensation of body functions in response to the impact of pathogenic factors and changing environmental conditions.

d) to study changes in diseases that arise both in connection with changing human living conditions and treatment (pathomorphosis), and as a result of therapeutic and diagnostic manipulations (pathology of therapy);

Module "Clinical pathological anatomy":

a) study of the tasks of the pathoanatomical service, methods and forms of their implementation. Familiarization of students with the principles of organization of the pathoanatomical service, methodological foundations of morphological analysis of biopsy and surgical material, and clinical interpretation of the pathoanatomical conclusion.

b) study of the rules for formulating a diagnosis based on the current classification of diseases, injuries, and causes of death.

c) mastering the methods of clinical and anatomical analysis.

d) study of the structure of clinical and pathological diagnoses, the order of their comparison.

e) identification of diagnostic errors and their causes.

f) training in the most common methods of fixing the material, including for diagnostic purposes, obtained at autopsy, for various studies.

g) students ' study of changes in diseases that occur both in connection with changing human living conditions and treatment (pathomorphosis), and as a result of various manipulations (pathology of therapy).

1.3. METHODOF DISCIPLINE IN THE STRUCTURE OF THE MAIN PROFESSIONAL EDUCATIONAL PROGRAM OF HIGHER EDUCATION

In accordance with the Federal State Educational Standard for Higher Education in the specialty "Medical Science", the discipline "Pathological anatomy, clinical pathological Anatomy" belongs to Block 1. The basic part is taught in 3,4 courses. The total labor intensity is 324 hours (9 SE). Of these, 192 classroom hours, 96 hours are allocated for independent work. The discipline is studied in 5-6, 7 semesters. Type of control: exam (6 semester), credit (7 semester).

The main sections of the discipline are:

General pathological anatomy

1.Damage. Dystrophy. Necrosis.
2.Circulatory disorders
3.Inflammation. Immunopathology
4.Compensatory and adaptive processes
5.Tumors

Private pathological anatomy

6.Introduction to nosology. Fundamentals of private pathological anatomy.
7.Diseases of the blood system
8.Diseases of the cardiovascular system
9.Respiratory diseases
10.Diseases of the gastrointestinal tract
11.Kidney diseases
12.Diseases of the endocrine glands
13.Infectious diseases

1.4. REQUIREMENTS FOR STUDENTS

To study the discipline, you need the knowledge, skills and abilities formedby the previous disciplines
Latin language
Knowledge: basic medical and pharmaceutical terminology in Latin.
Skills: be able to apply knowledge for communication and obtaining information from medical literature, medical documentation.(Level II-III)
Skills: apply medical and pharmaceutical terminology in Latin in professional activities
Professional foreign language
Knowledge*:* basic medical and pharmaceutical terminology in a foreign language.(Level II-III)
Skills: be able to apply knowledge to communication and obtain information from foreign sources.
Skills: applуть medical and pharmaceutical terminology in Latin in professional activities
History of medicine
Knowledge: outstanding figures in medicine and public health, Nobel laureates outstanding medical discoveries in the fieldof morphology and pathological anatomy, the influence of humanistic ideas on medicine.(Level II-III)
Skills: be able to correctly and independently present and analyze the contribution of Russianscientists to the development of pathological anatomy..
Skills: applуть the obtained information inprofessional activities
Philosophy
of Knowledge: methods and techniques of philosophical analysis of problems; forms and methods of scientific knowledge, their evolution; basic laws and trends in the development of the world historical process; laws of dialectical materialism in medicine. (Level II-III)
Skills*:* to be able to correctly and independently present, analyze the forms and methods of scientific knowledge and the laws of dialectical materialism in medicine.
Skills: applуть the obtained information inprofessional activities
Bioethics
Knowledge: moral and ethical norms, rules and principles of professional medical behavior, patient and doctor's rights, basic ethical documents regulating the doctor's activity.(II-III level), deontological aspects of pathological anatomy
Skills: to be able to build and maintain working relationships with relativesof the deceased, patients, colleagues, and other team members.
Skills: примеapply basic knowledge of ethics and deontology in the professional activity of a pathologist
Histology
Knowledge: embryogenesis of tissues and organ systems, histological structure and function of all cells and tissues of the body. Compensatory and adaptive processes(regeneration) of organs and tissues. (Level II-III)
Skills: be able to determine age-related patterns of development of organs and tissues of the body, know the normal structure of cells, tissues, organs, analyze the results of histophysiological research, sketch the normal structure of cells and tissues of the body, work with a light and electron microscope, taking into account safety regulations.

Skills: use your normal knowledge structures of organs and tissues in the assessment of pathological changes
Microbiology with virology
Knowledge: classification, morphology and physiology of microorganisms. Microbiological diagnostics of infectious diseases.
Skills: be able to analyze the results of microbiological diagnostics of infectious diseases; work with a light and electron microscope, taking into account safety regulations.
Skills: опpedetermine the infectious etiology of a pathological process (disease)
Modern problems
of Knowledge regeneration: biological essence, main forms and phases of the main typesof regeneration-physiological,епаративной reparative and pathological; general ideas about the possibility of stimulating regenerative processes occurring in the body; main types of stem cells, sources of their production, application in medicine.(Level II-III).
Skills: be able to analyze areas ofphysiological, reparative and pathological regeneration.
Skills: identify pathological processes associated with impaired regeneration
Physics, mathematics. Medical informatics. Medical biophysics
Knowledge*:* mathematical methods for solving intellectual problems and their application in medicine; theoretical foundations of computer science, collection, storage, search, processing, transformation, dissemination of information in medical and biological systems, use of information computer systems in medicine and public health; principles of operation and design of equipment used in medicine, fundamentals of physical and mathematical methods. laws that are reflected in medicine.щих отображение в медицине. (Level II-III).
Skills: be able to use educational, scientific, popular science literature, the Internet for professional activities, work with equipment taking into account safety regulations**.**
Skills: use modern technologies in professional activities
Biochemistry
Knowledge: structure and biochemical properties of the main classes of biologically important compounds, the main metabolic pathways of their transformation; the role of cell membranes and their transport systems in metabolism.(Level II-III).
Skills: be able to analyze the contributionof biochemical processes to the functioning of organs and systems of the body, interpret the results of the most common methods of laboratory diagnostics.
Skills: interpretation of the results of the most commonmethods of laboratory diagnostics of various biological objects
Biology
Knowledge: laws of genetics its significance for medicine; patterns of heredity and variability in individual development as the basis for understanding the pathogenesis and etiology of hereditary and multifactorial diseases; biosphere and ecology, the phenomenon of parasitism and bioecological diseases.(Level II-III) know the main morphological features of parasites and helminths.
Skills: be able to analyze patterns of heredity and изменчивариability; ability to work with a light microscope, taking into account safety regulations.
Skills: Microscopy of preparations and identification of the mainmorphological features ofpathogens
Anatomy
of Knowledge: Anatomical and physiological features of organs and systems of the body. Features of blood supply and innervation of organs and systems (level II-III). Age and constitutional features of the body. Embryogenesis.
Skills: be able to analyze the ageand sex characteristics of the structure of organs and systems.

Skills: use knowledge of the normal structure of organs and tissues in assessing pathological changes, the relationship of organ systems
Normal physiology
Knowledge: Neuroendocrine regulation of biological processes in the human body. Physiology of organs and systems of the body. (Level II-III)
Skills: be able to analyze the impact of regulation of biological processes in the human body on the functioning of all organs and systems.
Skills: use knowledge of the normal physiology of organ and tissue functioning to assess pathological changes

1.5.INTERDISCIPLINARY LINKS WITH SUBSEQUENT DISCIPLINES

Knowledge and skills acquired in the discipline "Pathological Anatomy, clinical pathological anatomy" are necessary for studying the following disciplines:

No. p/p	Name of subsequent disciplines	No. of sections of this discipline required for studying subsequent disciplines	
		1-General pathanatomy	2-private pathanatomy
1	Propaedeutics of internal diseases	++	+
2	Ophthalmology	++	+
3	Otorhinolaryngology	++	+
4	Dermatovenerology	++	+
5	Obstetrics and Gynecology	++	+
6	Pediatrics	++	+
7	Neurology, medical genetics, neurosurgery		+
8	Forensic medicine		+
9	Faculty therapy, Occupational diseases	++	+
10	Hospital Therapy, Endocrinology		+
11	Infectious Diseases		+
12	Phthisiology	+	
13	Outpatient Therapy	++	+
14	General Surgery, Radiation Diagnostics	+	
15	Anesthesiology, Resuscitation, Intensive care		+
16	Faculty Surgery, Urology		+
17	Hospital Surgery, Pediatric Surgery	++	+
18	Oncology, Radiation Therapy		+
19	Traumatology Orthopedics		+

1.6. Requirements for the results of mastering the discipline

The process of studying the discipline is aimed at the formation of the following competencies: UK-1, UK-3, UK-4, OPK-1, OPK-5, OPK-11.

№ n /	a Code and name of competence	Code and name of the indicator of achievement of competence	As a result of studying the academic discipline, the student must:		
			Know	Be Able	to Master
Universal competencies					
1	**UK-1** is able to carry out a critical analysis of problem situations based on a systematic approach, develop a strategy for actions	**ID UK-1.1.** Analyzes the problem situation as a system, identifying its components and links between them. **ID UK-1.2.** Identifies gaps in information needed to solve problem situations, and designs processes for their elimination. **ID UK -1.3.** Applies system analysis to solve problem situations in the professional sphere. **ID UK -1.4**. Applies system analysis to solve problem situations in the professional sphere.	- theycomplexity and main regularities of general pathological processes; - concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease, nosology, principles of classification of diseases; - the essence and basic laws of general pathological processes; - fundamentals of clinical and anatomical analysis, rules for constructing a pathoanatomical diagnosis, - principles of clinical and anatomical analysis and comparison of diagnoses.	substantiate the nature of the pathological process and its clinical manifestations; - assess the severity of pathological changes, complications and causes of death ; - compare morphological and clinical manifestations of diseases at all stages of their development; diagnose the causes, pathogenesis and morphogenesis of diseases, their manifestations, complications and outcomes, as well as pathomorphosis, and in case of death — the cause deaths and the mechanism of dying (thanatogenesis).	- ability to analyze the significance of pathological anatomy at the present stage -skills of clinical and anatomical analysis.

	UK-3. Able to organize and manage team work, developing a team strategy to achieve the set goal	**ID UK-3.1.** Works in a team, tolerates social, ethnic, confessional and cultural differences. **ID UK-3.3** Chooses constructive ways to resolve conflicts and contradictions in business communication. **ID UK-3.4.** Organizes discussions on a given topic and discussion of the results of the team's work with the involvement of opponents, developed ideas.	- possible areas and directions of professional self-realization, ways to achieve higher levels of professional and personal development	-identify and formulate problems of personal and professional	development by choosing methods, goals and tasks for the integrated solution of professional problems
	UK-4. He is able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction	**ID UK-4.1**. Uses communicative and linguistic tools to build effective partnership interaction with patients and colleagues. **ID UK -4.2.** It uses modern communication resources to search, process and transmit information necessary for high-quality performance of professional tasks and achievement of	-methods of collecting, storing, searching, processing, converting and distributing information in medical information systems, the use of computer systems in medicine and healthcare; - computer technologies for supporting and making medical decisions at different levels; - principles of automating the management of healthcare institutions using modern information technologies.	-to use modern technologies in professional activity, methods of obtaining knowledge from data, expert systems for diagnostics and management of treatment of diseases; - to use modern means of Internet resources for search of professional information at independent training and advanced	-basic technologies of information transformation: text and tabular editors; techniques of working on the Internet for professional activities -basic skills of using medical information systems and Internet resources to implement professional tasks in the work of the attending physician.

		professionally significant goals.		training on separate sections of medical knowledge.	
	OPK-1. Able to implement moral and legal norms, ethical and deontological principles in the professional activities	**ID OPK-1.1** Carries out professional activities in accordance with ethical norms and moral principles. **ID OPK-1.2**. Organizes professional activities in accordance with the legislation in the field of healthcare, knowledge of medical ethics and deontology.	-deontological aspects in the organization or cancellation of pathoanatomical autopsies, the issuance of a medical death certificate or a conclusion on biopsy and surgical material	-identify the concepts: the mechanism of death, the immediate cause of death, the main cause of death; -use the knowledge gained about structural changes in pathological processes and diseases in professional communication with colleagues and patients.	Based on the principles of ethics and deontology in the professional activity of a pathologist
	OPK-5 is able to assess morphofunctional, physiological states and pathological processes in the human body to solve professional problems	**ID OPK-5.2**. Knows the etiology, pathogenesis, morphogenesis, pathomorphosis of the disease development, basic concepts of nosology. **ID OPK-5.3** Knows the indicators of the morphofunctional and physiological state of a healthy person and is able to measure / determine	- the essence and basic laws of general pathological processes; - etiology, pathogenesis, morphogenesis and pathomorphosis of the disease development; - characteristic morphological changes of internal organs in various pathological processes; - functional systems of organs, their regulation and self-regulation in pathological processes; - fundamentals of clinical and	to justify the nature of the pathological process and its clinical manifestations; - to assess the severity of pathological changes by the main morphometric indicators -to compare morphological and clinical manifestations of diseases at all stages of their development	by macroscopic diagnostics of pathological processes; - microscopic (histological) diagnostics of pathological processes; - skills of clinical and anatomical analysis

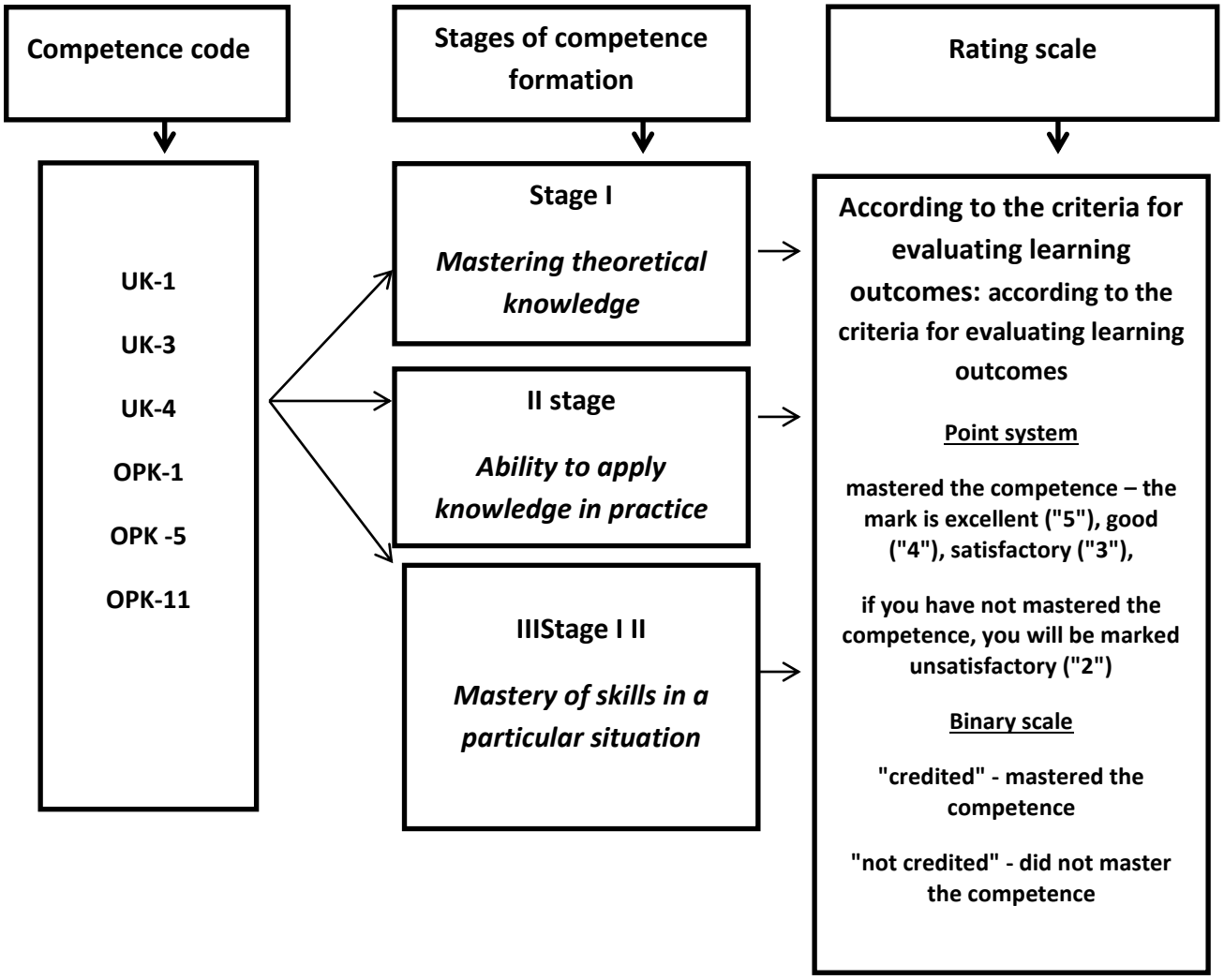
		them. **ID OPK-5.4** Applies indicators of the morphofunctional, physiological state and pathological process to examine the human body in order to establish a diagnosis, prescribe treatment and monitor its effectiveness and safety. **ID OPK-5.5** Analyzes macroscopic and microscopic changes in normal and pathologically altered tissues and organs. **ID OPK-5.6** Interprets the results of studies of biopsy and surgical material to solve professional problems and formulate a diagnosis according to the ICD.	anatomical analysis, rules for constructing a pathoanatomical diagnosis, - principles of clinical and anatomical analysis of biopsy and surgical material		
	OPK-11 is able to prepare and apply scientific, research and production, project, organizational, managerial and regulatory documentation in the healthcare system	**ID OPK-11.1.** Applies modern methods of collecting and processing information, conducts statistical analysis of the obtained data in the professional field and interprets the results to solve professional problems.	- theoretical foundations of the emergence and development of general pathological processes - modern methods for describing morphological changes in macroscopic examination -schemes for describing microscopic changes in normal and pathologically altered tissues	-conduct statistical analysis of the obtained data in the professional field and interpret the results for solving professional problems. - analyze and compile medical records and calculates qualitative and quantitative indicators	- knowledge of statistical analysis -terminology related to the main types of pathomorphological changes in the body -methods of physical, chemical, mathematical and other natural science studies to solve the

		ID OPK-11.2 Identifies and analyzes problem situations, searches for and selects scientific, regulatory, organizational and administrative documentation in accordance with the set goals. **ID OPK-11.4** Conducts scientific and practical research, analyzes information using the historical method, and makes publications based on research results.		used in professional activities. - conduct scientific and practical research; - make publications based on the results of research.	following problems: professional tasks. - basic skills in using medical information systems and Internet resources; - methods of maintaining medical records; - basic scientific methods of cognition: observation, description, measurement, experiment.

Modules of the discipline and the code of the formed competence

No. p/p	a Module name	Code of the formed competence
1	Module 1. Pathological anatomy	UK-1, UK-3, UK-4, OPK-1, OPK-5, OPK-11.
2	Module 2. Clinical pathological anatomy	UK-1, UK-3, UK-4, OPK-1, OPK-5, OPK-11.

1.7. Stages of competence formation and descriptions of assessment scales



1.8. Formsof organization of training and types of knowledge control over students' acquired competencies:

Form of organization of student training	**Brief description**
Lecture	The lecture material contains the key and most problematic issues of the discipline, the most significant in the training of a specialist.
Practical exercises	are designed to analyze (consolidate) theoretical positions and control control their assimilation with , followed by applying the acquired knowledge in the course of studying the topic.
Interactive forms of training	- solving situational problems with subsequent discussion,solving situational tasks with subsequent discussion, - interactive survey; - performing creative tasks, - discussions, - online course of the discipline in the Moodle system, - testing in the Moodle system.
Participation in research work of the department, student circle and conferences	- preparation ofодготовка oral reports and poster presentations for presentations at the student circle or scientific conference; - writing of theses and abstracts in the chosen scientific direction; - preparation of a literaryreview using educational, scientific, reference literature and Internet sources.
Types of control	**Brief description**
Entrance control	Testing of theoretical knowledge and practical skills formed by the computer science program in institutions of secondary (full) general education. Input control of knowledge includes: - teasing in theMoodle system (test of input control of knowledge), - solving situational problems and exercises. The results of the entrance control are systematized, analyzed and used by teachers of the department to develop measures to improve and update the teaching methods of the discipline.
Current control	Current knowledge control includes: - verification of solutions to situational tasks performed independently (extracurricular independent work); - assessment of the assimilation of theoretical material (oral survey); - test of mastering practical skills interview on situational tasks, interpretation of micro-and macro-preparations) - drawing of micro-preparations and drawing up the protocol; - testing in the Moodle system on all topics of the discipline (tests include questions of a theoretical and practical nature); - individual tasks (practical and theoretical) for each topic of the discipline studied.

Intermediate certification	- testing in the Moodle system (intermediate certification test); - exam (interview on theoretical questions, description of the macro-product, interpretationof the micro-product) - 6 semester - credit (testing, interview on theoretical questions – - 7 semester Intermediate certificationis presentedwith a credit at the end of the 4th semester, a credit with an assessment at the end of the 9th semester. -

2. STRUCTURE AND CONTENT OF THE DISCIPLINE.

2.1. Scope of the discipline and types of academic work:

Types of academic work	**Total hours**	**Semesters**		
		5	**6**	**7**
Lectures	56	20	22	14
Practical exercises (seminars)	136	52	50	34
Independent work of students	96	36	36	24
Exam	36		36	
Total labor intensity in hours	324	108	144	72
Total labor intensity in credits	9	3	4	2

2.2. Thematic plan of lectures and their content.

№ n /	a Name of practical training topics	Content of practical training	topics Codes of formed competencies and indicators of their achievement	Labor intensity (hours)
	Module "Pathological anatomy"			
	V semester			
1.	**Historical stages of development of pathological anatomy. Parenchymal dystrophy. Carterial-vascular dystrophy.** Historical stages of development of foreign pathological anatomy.Contents, methods, tasks, and place in medical science and healthcare practice. Connection of pathological anatomy with related disciplines. Parenchymaldystrophies as an expression of disorders of tissue/ cellular / metabolism and as one of the forms of damage /alteration/. Umbilical cords, mechanism,morphology of stromal-vascular dystrophies. Methods of identification, classification, morphological characteristics, manifestations and complications of protein, fat and carbohydrate stromal-vascular dystrophies.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
2	**Mixed dystrophies, complex protein** metabolism disorders Chromoprotein metabolism disorders: endogenous pigments: hemoglobinogenic, proteinogenic /tyrosine-tryptophan / and lipidogenic / lipopigments/. Causes of dysregulation of chromoproteins. Endogenous pigments species: mechanism of development, morphological characteristics. Violation of the exchange of hemoglobinogenic pigments. Hemosiderosis, hemomelanosis, hemochromatosis: jaundice (suprahepatic, hepatic, subhepatic), porphyria. Violation of the exchange of proteinogenic pigments. Melanosis (common and local, acquired and congenital), albinism. Addison's disease. Violation of the exchange of lipidogenic pigments: lipofuscin, brown atrophy of the myocardium, liver. Disruption ofnucleoprotein metabolism. Violation of mineral metabolism.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
3	**Necrosis, heart attacks, gangrene** The essence of necrosis. Necrosis as a consequence of "local death". Autolysis. The concept of necrobiosis, paranecrosis. Apoptosis. Causes, mechanism of development, and morphological characteristics of necrosis. Classification of necrosis depending on the cause that caused necrosis (traumatic, toxic, trophoneurotic, allergic, vascular) and the mechanisms of action of the pathogenic	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2

	factor (direct and indirect necrosis). Clinical and morphological forms of necrosis: coagulation/ dry /and colliquation/ wet / necrosis, infarction, gangrene, sequestration. Their characteristics. Significance of necrosis and its outcomes. Atrophy. Their types. Lyle's syndrome - as a manifestation of drug allergy.		
4	**Circulatory and lymphatic disorders: plethora, morphology of acute and chronic heart failure. Thrombosis, embolism** The concept of general and local circulatory disorders, their relationship, classification. артериальное Arterial and venous plethora. Venous fullness, general and local, acute and chronic. Anemia: causes, types, morphology, and outcomes. Lymphatic circulation insufficiency: causes, types (mechanical, dynamic, resorptive), morphological characteristics. Thrombosis, factors of thrombosis formation. Embolism: causes, types, morphological characteristics, outcomes, and significance of embolism. Thromboembolism: causes of development, clinical significance. Pulmonary embolism. Thromboembolic syndrome: clinicaland morphological characteristics.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
5	**Inflammation. General questions. Alternative and exudative inflammation. Productive inflammation: a banal and specific** concept and the biological essence of inflammation. History of the doctrine of inflammation. Modern theories of inflammation. Etiology and pathogenesis, clinical signs of inflammation. Humoral and nervous factors regulating inflammation. Morphology of inflammation: alteration, exudation, proliferation. Classification: banal and specific, acute and chronic inflammation. Productive inflammation, its types: interstitial / interstitial/, granulomatosis, inflammation around animal parasites, inflammation with the formation of polyps and genital warts. Causes, mechanisms of development, morphological characteristics, outcomes.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
6	**Immunopathological processes** Immunopathology and immunomorphology, their content. Methods of immuno-morphological research. Morphology of immunogenesis. Humoral and cellular immune responses. Morphological characteristics of the conditions of central and peripheral organs of lymphoid tissue. Morphology and morphogenesis. Morphology and morphogenesis of peripheral lymphoid tissue in antigenictherapy. Autoimmune diseases. Etiology, mechanisms of development, morphological characteristics. Secondary immunodeficiency states; AIDS.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
7	**Compensatory adaptive processes** Classification of compensatory adaptive processes, phases of their formation, causes, pathogenesis, types, morphology, meaning and outcomes of regeneration and organization, encapsulation, hypertrophy, hyperplasia, metaplasia. Macroscopic manifestations and features of these processes.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2

	Regeneration: definition, types. Regeneration of various tissues and organs. Modern views on regeneration processes. Metaplasia: definition, types, significance for the body.		
8	**Tumors. General morphology. Classification. Tumors from the epithelium** Definition of the concept of a tumor. Etiology of tumors. Morphogenesis and histogenesis of tumors. The concept of tumor progression /its morphological proofs. Precancerous conditions, their essence, morphology. Methods of morphological / cytological / tumor diagnostics. The importance of biopsy in oncology. Appearance and structure of tumors. Cellular and tissue atypism, its characteristics. Anaplasia, concepts, types, and manifestations. Tumor growth: expansive and infiltrating, exophytic and endophytic. Basic properties of tumors.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
9	**Mesenchymal tumors. Tumors from nervous and melanin-forming tissues** Tumors from mesenchymal tissues, their classification and the main types of these neoplasms. MMorphological characteristics of tumors of connective tissue, vascular, muscle, bone-joint, and mesothelial origin. Classification and features of tumors of the nervous system and meninges. Tumors from melanin-forming tissue – nevi and melanoma.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
10	**Introduction to nosology. Structure of the diagnosis. Nomenclature of diseases** The concept of a disease. Organo-pathological, syndromic and nosological principles of studying diseases. Criticism of antinozologism. Etiology and pathogenesis. Nosological pathological anatomy. Criticism of monocasualism and conditionalism in the interpretation of the disease. Drug pathomorphosis of diseases and pathology of therapy. Classification and nomenclature of diseases. Diagnosis, principles of its construction. Main concomitant disease, complications, and causes of death.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
	Total hours V semester		**20**
	VI semester		
1	**Diseases of the blood system** Anemia:definition, classification, causes, clinical and morphological characteristics, diagnosis. Hemolytic anemia: hereditary, acquired, autoimmune, mixed origin. Dyserythropoietic anemia. Megaloblastic anemia, pernicious anemia, iron deficiency anemia, iron metabolism disorders, hypoplastic and aplastic anemia. Leukemias. Classification, general clinical and morphological characteristics. Acute leukemias: diagnostic methods, stages of the course, clinical and morphological characteristics, complications, drug pathomorphosis, age characteristics,causes of death. Chronic leukemias.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
2	**Diseases of the cardiovascular system. Atherosclerosis. Hypertension. Coronary heart disease** Atherosclerosis. Etiology, pathogenesis,pathologic anatomy,pathology, clinical and	UK-1, UK-3, UK-4 OPK-1, OPK-5,	2

	morphologicalsymptoms, their characteristics, causes of death. Atherosclerosis and myocardial infarction, their relationship. Etiology and pathogenesis of hypertension. Morphological characteristics of stages. Morphology of hypertensive crisis. Clinical and morphological forms of hypertension, their characteristics, causes of death. The concept of coronary heart disease, the relationship with atherosclerosis and hypertension. Etiology and pathogenesis. Acute ischemic disease and myocardial infarction. ХрониChronic ischemic heart disease. Morphology, complications, and causes of death.	OPK-11	
3	**Diseases of the cardiovascular system. Rheumatic diseases. Heart defects** General characteristics of collagen diseases, their varieties: rheumatism, rheumatoid arthritis, systemic lupus erythematosus, scleroderma, dermatomyositis, Sjogren's disease, Ankylosing spondylitis. Rheumatism - etiology, pathogenesis, localization of major changes in rheumatism. Heart damage - endocarditis, myocarditis. Heart defects: their types. Morphological changes in the body with congestive phenomena in the large and small circulatory circles. Patomorphology for various types of acquired heart defects.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
4	**Acute inflammatory lung diseases. Acute pneumonia. Chronic obstructive pulmonary diseases** Acute bronchitis. Causes, mechanism of development, morphology. Croup pneumonia. Etiology, pathogenesis, pathological anatomy, stages. ЛНereditary pathomorphosis of pneumonia. Focal pneumonia /bronchopneumonia/. Etiology, pathogenesis,and complications. Chronic obstructive pulmonary diseases (chronic bronchitis, bronchiectasis, chronic abscess, chronic pneumonia, pneumosclerosis /pneumocirrosis/, chronic obstructive pulmonary emphysema). Etiology, pathogenesis, andpathologic anatomy of each nosological unit from the group of chronic obstructive pulmonary diseases.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
5	**Diseases of the gastrointestinal tract. Diseases of the esophagus, stomach, intestines** Diseases of the esophagus:esophagealdverticules,esophagitis, esophageal cancer.Classification, morphological characteristics. Stomach diseases: gastritis, acute and chronic. Peptic ulcerof the pancreas, duodenum. Stomach cancer. Distribution, etiology, and pathogenesis. Precancerous conditions. Clinico-morphological classification, morthology. Intestinal diseases. Enteritis, enteropathies. Intestinal tumors. Rectal cancer. Forms, morphological characteristics, and complications.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
6	**Diseases of the gastrointestinal tract. Diseases of the liver, gallbladder, and pancreas** Hepatosiss are hereditary and acquired. Toxic dystrophy -etiology, pathogenesis, pathological anatomy, complications, outcomes. Fatty hepatosis/ liver steatosis / -etiology, pathogenesis. Acute and chronic hepatitis, primary and secondary. The importance of liver puncture biopsy in creating a	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2

	modern classification of hepatitis. Morphological characteristics. Cirrhosis of the liver. Etiology, pathogenesis, and morphology. Diseases of the gallbladder. Cholecystitis, acute and chronic, calculous. Gallbladder stones. Gallbladder cancer. Diseases of the pancreas.		
7	**Kidney diseases. Kidney tumors** tolassification of nephropathies, basic information about the etiology, pathogenesis, and pathologicanatomy of glomerulopathies. Glomerulonephritis-types, macro-and microscopic characteristics. Nephrotic syndrome, classification, manifestations. Amyloidosis of the kidneys, etiopathogenesis. Morphology of acute renal failure. Pyelonephritis. Nephrolithiasis. Nephrosclerosis. Pathologic anatomy, outcomes, and causes of death.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
8	**Diseases of the endocrine glands** Diseases of the pituitary gland, adrenal gland and sex glands. Diseases of the thyroid gland. Goiter: classification by macro-and microscopic picture. Sporadic and endemic goiter. Bazedova's disease-definition, changes in internal organs. Diabetes mellitus. Diseases of the pituitary and adrenal glands.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
9	**Infectious diseases. Common regulations. Intestinal infections** are biological and social factors in the development of infectious diseases. Reactivity of the body and infection, the value of the age factor. General morphology of the infectious process, local and general changes. Immunomorphology of infection. Classification of infectious diseases, its principle. Pathogen, entrance gate, pathogenesis of infection. Cyclic and acyclic infections. Complications, causes of death. Pathomorphosis of infectious diseases. Bacterial dysentery. Typhoid fever and salmonellosis. Amoebiasis. Epidemiology, etiology, pathogenesis and morphogenesis, morphological characteristics, clinical manifestations, complications, outcomes, causes of death. Cholera.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
10	**Infectious diseases. Airborne infections. Sepsis** and Scarlet fever. Epidemiology, etiology, pathogenesis (virulence factors), morphogenesis, morphological characteristics, clinical manifestations, complications, outcomes, causes of death. Measles. Mumps (mumps). Meningococcal infection. Chicken pox. Whooping cough. Diphtheria. Etiology, epidemiology, pathogenesis and morphogenesis, morphological characteristics, clinical manifestations, complications, outcomes, causes of death. Sepsis, otlichiya from other infections. Etiology, pathogenesis, macro - and micro-organism relationships. The concept of septic foci, entrance gates (classification, morphology). Classificationof sepsis. Clinical and anatomical forms.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
11	**Tuberculosis. Syphilis** Tuberculosis. Epidemiology, etiology, pathogenesis and morphogenesis. Classification (primary, hematogenic, secondary). Morphological characteristics, clinical manifestations, complications, outcomes, causes of death. Pathomorphosis of tuberculosis. Syphilis. Etiology. Pathogenesis.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2

	Primary, secondary, and tertiary periods. Congenital syphilis, early or late. Visceral syphilis. Pathological anatomy, complications, and causes of death. Pathomorphosis of syphilis.		
	Total hours VI semester		**22**
	Total hours		**42**
	Module "Clinical pathological anatomy"		
1	**Tasks, methods and organization of the pathoanatomical service. Regulations on the procedure for autopsies of corpses.** Basic research methods in pathanatomy. Basic orders of the Ministry of Health and their applications. Rules for completing the autopsyreport.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
2	**Principles of diagnosis construction. Iatrogeny. The main provisions of the theory of diagnosis.** Anoverview of the diagnosis, its types and principles of formulation. Номенклатура WHO and ICD - 10 nomenclature. Definition of the diagnosis, basic terminology. Iatrogenies – classification, categories, Causes and mechanism of development of iatrogenies. The concept of pathoanatomical epicrisis.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
3	**Rules for the formulation of pathoanatomical diagnosis in diseases of the digestive** system Principles for the formulation of diagnoses in diseases of the digestivesystem. Classification of diseases of the digestive system (diseases of the stomach, intestines, liver and gallbladder).	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
4	**Rules for the formulation and algorithms for constructing a pathoanatomical diagnosis in tuberculosis, HIV infection and their combination** Tuberculosis pathomorphosis, clinical and morphological forms, complications. AIDS – clinical and morphological forms. Rules for writing the protocol ofobservation, drawing up a pathoanatomical diagnosis, rules for writing a clinical andpathoanatomical epicrisis.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
5	**Principles of research of biopsy, surgical material.** Basic research methods in Patanatomi and. Types of histological staining, methods of fixation of biopsy and surgical material. Rules for filling out the main documentation (referral and protocol of an intravital study)	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
6	**Procedure for the appointment and conduct of pathoanatomical autopsies of corpses. Expert work of a pathologist. Main tasks of the commission for the study of fatal outcomes, treatment and control commission in the treatment and diagnostic process** Features of the expert work of a pathologist. The concept of KEELS, LCC. Requirements submitted to themedical examinerby the health protection authorities. Registration ofaclinicaloго and anatomical epicrisis, протоколаautopsyreport, ra categoryof convergence of diagnoses.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2

7	**Structure and objectives of the International classification of Diseases.** An understandingof the ICD structure, diagnosis, its types and principles of formulation.	UK-1, UK-3, UK-4 OPK-1, OPK-5, OPK-11	2
	Total hours		**14**

2.3. Thematic plan of practical classes and their content.

№ n /	a Name of practical training topics	Content of practical training	topics Codes of formed competencies and indicators of their achievement	Types of control	Labor intensity (hours)
5 semester					
1	Introduction to the subject of pathanatomy. Historical stages of pathanatomy development. Parenchymal dystrophy	Entrance control (testing of theoretical knowledge generated by the program) **Theoretical part:** Historical stages of development of foreign pathological anatomy.Contents, methods, tasks, and place in medical science and healthcare practice. Connection of pathological anatomy with related disciplines. Parenchymaldystrophies as an expression of disorders of tissue/ cellular / metabolism and as one of the forms of damage /alteration/. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
2	Stromal-vascular dystrophy	**Theoretical part:** Umbilical cords, mechanism, morphology of stromal-vascular dystrophies. Methods of identification, classification, morphological characteristics, manifestations and complications of protein, fat and carbohydrate stromal-vascular dystrophies. **Practical part:**	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2,	Front-end survey, solving situational problems, protocol design, testing in the Moodle system.	3,2

		Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	11.4.		
3	Mixed dystrophies	**Theoretical part:** Causes, pathogenesis of the exchange of endogenous pigments, nucleoproteins, calcium and stone formation, their outcomes and significance. Disorders of the exchange of hemoglobinogenic, lipidogenic and proteinogenic pigments. Mineral dystrophy: causes, types. Stone formation: causes and types of stones. The concept of gallstone and urolithiasis, their complications. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
4	Necrosis, heart attacks, gangrene	**Theoretical part:** Definition of necrosis, classification, morphological types, complications, outcomes, clinical manifestations. Neuroses ofdifferent localization, their morphological features. Causes, morphology, outcomes, and complications of myocardial infarction. Ides of gangrene, their causes, clinical and anatomical forms. Heart attacks - definition, types, outcomes, significance for the body. Infarctions of the heart, lungs, intestines, brain, liver, kidneys, and spleen. Necrosis - the essence, types by mechanisms of occurrence and manifestations, and outcomes of necrosis. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
5	Final lesson on the section "Damage. Dystrophy. Necrosis"	**Theoretical part:** Testing of theoretical knowledge in the section **Practical part:** Description of macro-preparations.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2.	Front-end survey, testing in the Moodle system.	3,2

			OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.		
6	Circulatory disorders: fullness of blood, venous and arterial, hyperemia, stasis, bleeding	**Theoretical part:** Inthe ides of blood supply disorders. Umbilical cords, mechanism of development, morphological manifestations of local and general anemia, outcomes andclinical significance of these conditions.Pimples, manifestations and outcomes of local and general venous plethora, as a manifestation of acute and chronic heart failure. Signs of heart failure, causes, mechanisms of development, outcomes, and the most common causes of death in these conditions.ризнаки сердечной недостаточности, п Morphology of acute and chronic heart failure. Local and general arterial plethora and anemia. Stasis. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
7	Circulatory disorders: thrombosis, embolism	**Theoretical part:** Morphology, causes, mechanism, types and outcomes of thrombosis. Embolism-definition, types, morphogenesis, meaning. Bleeding and hemorrhage, their types, outcomes, and significance for the body. Inthe ides of bleeding and hemorrhage of the most important and frequent localizations, manifestations and complications of embolism, thrombosis of various vascular systems of the body. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2

8	Inflammation. General questions. Alternative and exudative inflammation	**Theoretical part:** Consistency ofthe theory of inflammation in the morphofunctional aspect. the relationship between the concepts of local andgeneral in the problem of inflammation. Etiology, pathogenesis and main morphological and biochemical components of the inflammatory response, their regulatory and adaptive significance for the body. Clinical and morphological signs of inflammation. Classification and characterization of various types of inflammation. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
9	Productive inflammation: banal and specific	**Theoretical part:** Aboutthe limit of productive inflammation, its cellular composition and the origin of these cells, etiological factors and the relationship of this type of inflammation with the immunocompetent system. Classification and characteristics of interstitial and granulomatous inflammation, types of granulomas. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
10	Immunopathological processes	**Theoretical part:** Definition of immunopathology, the main sections of this science, its relationship with immunomorphology and the study of inflammation. Based on the knowledge of macro - and microscopic pictures of immunopathological processes, each student should be able to determine certain immunopathological processes, represent their significance for the body. **Practical part:** Description of macro-preparations, drawing of micro-	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, protocol design, testing in the Moodle system.	3,2

		preparations with registration of the protocol.			
11	Final lesson	**Theoretical part:** Testing of theoretical knowledge in the section **Practical part:** Description of macro-preparations.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
12	Compensatory and adaptive processes	**Theoretical part:** Classification of compensatory-adaptive processes, phases of their formation, causes, pathogenesis, types, morphology, meaning and outcomes of regeneration and organization, encapsulation, hypertrophy, hyperplasia, metaplasia. Macroscopic manifestations and features of these processes. Regeneration: definition, types. Regeneration of various tissues and organs. Modern views on regeneration processes. Metaplasia: definition, types, significance for the body. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
13	Tumors. General morphology. Classification. Epithelial tumors (organ-specific)	**Theoretical part:** Tumors: definition, current theories of tumor growth, appearance and structure, form of growth and relapses, metastases, classification, precancerous conditions. Secondary changes in tumors. Malignancy criteria. Classification of tumors from the epithelium. Types of benign and non-cancerous diseases malignant epithelial tumors. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2

14	Organ-specific tumors from the epithelium	**Theoretical part:** Classification of organ-specific benign and malignant tumors from the epithelium, macro-and microscopic features, and precancerous conditions for this group of neoplasms. Morphological characteristics of tumors of the stomach, lungs, uterus, mammary glands, ovaries, kidneys, and skin. Background morphological manifestations, pathways of metastasis, and stages of gastric, ovarian, uterine, kidney, breast, and lung cancer. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, protocol design, testing in the Moodle system.	3,2
15	Mesenchymal tumors. Tumors from the nervous and melanin-forming tissue	**Theoretical part:** Tumors from mesenchymal tissues, their classification and main types of these neoplasms. Morphological characteristics of tumors of connective tissue, vascular, muscle, bone-joint, and mesothelial origin. Classification and features of tumors of the nervous system and meninges. Tumors from melanin-forming tissue – nevi and melanoma. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,2
16	Final semester test	**Theoretical part:** Testing of theoretical knowledge in the **Practical part section:** Description of macro-preparations, drawing of micro-preparations with the protocol design.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3.2
	Total hours 5				**52**

	semester				
	6 semester				
1	Diseases of the blood system	**Theoretical part:** Classification of diseases of the blood system. New varieties of anemia and hemoblastosis. Macro-andmicroscopic characteristics of diseases. Andnemias: post - hemorrhagic, due to circulatory disorders and increased blood destruction-hemolytic. Hemoblastosis. Modern classification, principles of its construction, agefeatures. Systemic hemoblastoses/ leukemias / and their main syndromes. Malignant lymphomas. Lymphogranulomatosis, forms, morphological manifestations. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,3
2	Atherosclerosis. Hypertension. Coronary heart Disease	**Theoretical part:** Echopathogenesis of atherosclerosis and CHD, their relationship. Definition of atherosclerosis. Etiology and pathogenesis. Stages and complications. Clinical and morphological forms. Heart damage in atherosclerosis: myocardial infarction, cardiosclerosis. Brain and kidney damage in atherosclerosis. Outcomes and causes of death. Theories of the etiopathogenesis of hypertension, stages of hypertension, vascular damage, changes in the brain, heart, and kidneys in hypertension. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, drawing up a protocol, testing in the Moodle system.	3,3
3	Rheumatic diseases. Heart defects	**Theoretical part:** General characteristics of collagen diseases, their varieties: rheumatism, rheumatoid arthritis, systemic lupus erythematosus, scleroderma, dermatomyositis,	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2.	Front-end survey, protocol design, testing in the Moodle	3.3

		Sjogren's disease, Ankylosing spondylitis. Rheumatism - etiology, pathogenesis, localization of major changes in rheumatism. Heart damage - endocarditis, myocarditis. Heart defects: their types. Morphological changes in the body with congestive phenomena in the large and small circulatory circles. Hemodynamics and pathomorphology in various types of acquired heart defects. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	system.	
4	Acute inflammatory lung diseases. Acute pneumonias	**Theoretical part:** Pneumonia: etiology, types, classification. Croup pneumonia, its morphology, stages, and complications. Focal pneumonia. Difference between focal and croup pneumonias, outcomes of acute pneumonias. Acute bronchitis. Lung abscess. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,3
5	Chronic obstructive pulmonary diseases. Lung Cancer	**Theoretical part:** Etiology, pathogenesis, classification, pathanatomy of chronic obstructive pulmonary diseases: chronic bronchitis, emphysema, bronchiectasis, bronchial asthma. Anthracosis, cor glycosis - morphological manifestations and stages. "Pulmonary heart" - causes of development, manifestations. Cancer of the bronchi and lungs. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,3
6	Diseases of the gastrointestinal tract. Diseases of the esophagus, stomach,	**Theoretical part:** Causes, morphology, and types of gastritis. Acute stomach ulcers. Gastric ulcer: causes, morphology, complications, outcomes. Stomach cancer. Intestinal	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2.	Front-end survey, solving situational problems,	3,3

	and intestines	diseases. Appendicitis-classification, etiology, and pathogenesis. Complications of appendicitis. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	drawing up a protocol, testing in the Moodle system.	
7	Diseases of the gastrointestinal tract. Diseases of the liver, gallbladder, and pancreas	**Theoretical part:** Classification of liver diseases. basic information about the etiology, pathogenesis, classification, pathanatomy of toxic liver dystrophy, fatty hepatosis, hepatitis of various etiologies, cirrhosis of the liver. Hepatoses are hereditary and acquired. Liver cancer. Cholecystitis. Pancreatitis. Peritonitis. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,3
8	Kidney diseases. Glomerulopathy and Tubulopathy	**Theoretical part:** On theclassification of nephropathies, basic information about the etiology, pathogenesis, and pathologicanatomy of glomerulopathies. Glomerulonephritis-types, macro- and microscopic characteristics. Nephrotic syndrome, classification, manifestations. Amyloidosis of the kidneys, etiopathogenesis. Morphology of acute renal failure. Pyelonephritis. Nephrolithiasis. Nephrosclerosis. Pathological anatomy, outcomes and causes of death **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,3
9	Thyroid diseases. Diabetes mellitus. Diseases of the pituitary and adrenal	**glands Theoretical part:** Diseases of the pituitary gland, adrenal gland and sex glands. Diseases of the thyroid gland. Goiter: classification by macro-and microscopic picture. Sporadic and endemic goiter. Bazedova's disease-definition, changes in internal organs. Diabetes mellitus.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6.	Front-end survey, protocol design, testing in the Moodle system.	3,3

		Diseases of the pituitary and adrenal glands. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	OPK-11: ID 11.1, 11.2, 11.4.		
10	Dyshormonal and inflammatory diseases of the genital organs. Diseases of pregnancy and the postpartum period	**Theoretical part:** Diseases of pregnancy and the postpartum period. Toxicosis of pregnancy. Ectopic pregnancy. Acute and chronic endometritis. Causes, morphology, outcomes, ммacro-and microscopic picture the main dyshormonal and tumoral diseases of the genitals.Umbilical cord drift, placental polyp, uterine cancer, fibroadenoma and mastopathy of the mammary glands, prostatic hypertrophy. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, protocol design, testing in the Moodle system.	3,3
11	Infectious diseases. Intestinal infections. Sepsis Meningococcal infection	**Theoretical part:** Dysentery: etiology, pathomorphology, complications. Typhoid fever: etiology, stages of morphological changes. Meningococcal infection: etiology, changes in the central nervous system. Sepsis-causes, mechanism, and types. Organ damage in sepsis. Septic endocarditis. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,3
12	Airborne infections. Diphtheria. Scarlet fever. Measles. Flu. Whooping	**Cough Theoretical part:** New information about pathogens, sources and routes of infection, pathogenesis, and pathological anatomy of childhood infections and airborne droplets. Outcomes, complications, and causes of death in infections: measles, diphtheria, scarlet fever, chickenpox, and whooping cough. **Practical part:**	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,3

		Description of macro-preparations, drawing of micro-preparations with registration of the protocol.			
13	Tuberculosis	**Theoretical part:** Tuberculosis-etiology, classification. Forms of primary tuberculosis, their morphological manifestations. Hematogenic tuberculosis, its forms. Types of secondary tuberculosis and their features. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, protocol design, testing in the Moodle system.	3,3
14	Syphilis	**Theoretical part:** Background information on the pathogen, pathogenesis, pathological anatomy, and general patterns of inflammation in syphilis. Pathological anatomy of various stages of syphilis, as well as causes of death in this disease. Macroscopic changes in organs and tissues, morphology of the most important complications in them. **Practical part:** Description of macro-preparations, drawing of micro-preparations with registration of the protocol.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, drawing up a protocol, testing in the Moodle system.	3,3
15	Final semester test	**Theoretical part:** Testing of theoretical knowledge in the **Practical part section:** Description of macro-preparations, drawing of micro-preparations with the protocol design.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, testing in the Moodle system.	3.3
	Total hours 6 semester				**50**

	Total hours:				**102**

Module "Clinical pathological anatomy"

Thematic plan of practical exercises

1	Purpose, tasks and methods of the pathoanatomical service. Documentation. Expert work of a pathologist	**Theoretical part:** Basic research methods in pathanatomy. Basic orders of the Ministry of Health and their applications. Rules for completing the autopsyreport. **Practical part:** Solving situational problems, making a pathoanatomical diagnosis	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, testing in the Moodle system.	3,4
2	Principles of diagnosis construction. Structure and objectives of the International Classification of Diseases.	**Theoretical part:** Description ofthe diagnosis, its types and principles of formulation, the main headings of clinical and pathoanatomical diagnoses. ICD structure, principles of classification of diseases. **Practical part:** Solving situational problems, drawing up the autopsy report, writing a pathoanatomical diagnosis	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, making a protocol	3,4
3	Principles of diagnosis construction. Iatrogeny.	**Theoretical part:** Definition of the diagnosis, basic terminology. Iatrogenies – classification, categories, Causes and mechanism of development of iatrogenies. The concept of pathoanatomical epicrisis. **Practical part:** Solving situational problems, drawing up the autopsy report, writing a pathoanatomical diagnosis	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, drawingup a protocol	3,4

4	Pathoanatomical analysis of diseases of the gastrointestinal tract	**Theoretical part:** Principles of formulation of diagnoses in diseases of the digestivesystem. Classification of diseases of the digestive system (gastritis, peptic ulcer, etc.). **Practical part:** Solving situational problems, making an autopsy report, writing a pathoanatomicaldiagnosis, filling out a medical death certificate.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solution of situational problems, registration of the protocol	3,4
5	Clinical and anatomical analysis of respiratory diseases. Tuberculosis	**Theoretical part:** Principles of diagnosis formulation in respiratory diseases.Modern classification ofrespiratory diseases. Pathomorphosis of tuberculosis **Practical part:** Solving situational problems, making an autopsy report, writing a pathoanatomicaldiagnosis, filling out a medical death certificate.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, drawingup a protocol	3,4
6	Pathoanatomic analysis of diseases of the cardiovascular system	**Theoretical part:** Morphology of diseases of the cardiovascular system. Principles диагноof diagnosis formulation in diseases of the cardiovascular system. **Practical part:** Solving situational problems, making an autopsy report, writing a pathoanatomicaldiagnosis, filling out a medical death certificate.	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, solving situational problems, drawing up a protocol, testing in the Moodle system.	3,4
7	Rules for formulating a pathoanatomical diagnosis in diseases of the digestive	**system Theoretical part:** Principles of formulation of diagnoses in diseases of the digestivesystem. Classification of diseases of the digestive system (diseases of the liver and gallbladder). **Practical part:**	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2.	Front-end survey, protocol design, testing in the Moodle system.	3,4

		Solving situational problems, making an autopsy report, writing a pathoanatomicaldiagnosis of Criminal	OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.		
8	Rules of formulation and algorithms for constructing a pathoanatomical diagnosis for tuberculosis, HIV infection and their combination	**Theoretical part:** Pathomorphosis of tuberculosis, clinical and morphological forms, complications. AIDS – clinical and morphological forms. Rules for writing the protocol ofthe event, drawing up a pathoanatomical diagnosis, rules writing a clinical andanatomical epicrisis. **Practical part:** Solving situational problems, making an autopsy report, writing a pathoanatomicaldiagnosis of Criminal	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey,Mental survey, Solving situational problems, testing in the Moodle system.	3,4
9	Principles of research of biopsy and surgical material.	**Theoretical part:** Basic research methods in Patanatomi and. Types of histological staining, methods of fixation of biopsy and surgical material. Rules for filling out the main documentation (referral and protocol of an intravital study) **Practical part:** Solving situational problems, making a referral for a lifetime pathoanatomical study, writingгноза	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey Functional survey, Solving situational problems, testing in the Moodle system	3.4
10	Final test	**Theoretical part:** Testing of theoretical knowledge in the section **Practical part:** Execution of the autopsy	UK-1: ID 1.1, 1.2, 1.3, 1.4. UK-3: ID 3.1, 3.3, 3., 4. UK-4: ID 4.1, 4.2. OPK-1: ID 1.1, 1.2. OPK-5: ID 5.2, 5.3, 5.5, 5.6. OPK-11: ID 11.1, 11.2, 11.4.	Front-end survey, testing in the Moodle system.	3.4
	Total hours 7 semester:				**34**

2.4. Interactive forms of learning

Interactive teaching methods (discussions, interactive survey, computer modeling, discussions, situational task analysis, analysis of autopsy protocols and medical documentation, etc.) are widely used in practical classes to activate students' cognitive activityu, etc.), participation in histological work.

No. p/p	a Topic of the practical lesson	Labor intensity in hours	Interactive form of training	Labor intensity in hours, in % of the lesson
1	2	3	4	5
1	Introduction to the subject of pathanatomy. Historical stages of pathanatomy development. Parenchymal dystrophies	3,2	Discussion, Interactive survey.	30 minutes (0.5hours) / 17.2%
2	Stromal vascular dystrophies	3.2	Discussion Interactive survey.	30 minutes (0.5hours) / 17.2%
3	Mixed dystrophies	3.2	Interactive survey. Mutual review of notes	30 minutes (0.5hours) / 17.2%
4	Necrosis, infarction, gangrene	3,2	Brainstorming. Mutual review of notes.	30 minutes (0.5hours) / 17.2%
5	Final lesson on the section "Damage. Dystrophy. Necrosis"	3,2	Interactive survey Method of small groups	30 minutes (0.5hours) / 17.2%
6	Circulatory disorders: fullness of blood venous and arterial, hyperemia, stasis, bleeding	3,2	Brainstorming. Mutual review of abstracts	30 minutes (0.5hours) / 17.2%
7	Circulatory disorders: thrombosis, embolism	3.2	Mutual review of notes.	30 minutes (0.5hours) / 17.2%
8	Inflammation. General questions. Alternative and exudative inflammation	3.2	Small group method	30 minutes (0.5hours) / 17.2%
9	Productive inflammation: banal and specific	3.2	Brainstorming. Mutual review of notes.	30 minutes (0.5hours) / 17.2%
10	Immunopathological processes	3.2	Brainstorming.	30 minutes (0.5hours) / 17.2%
11	Final session	3.2	Interactive survey	30 minutes (0.55 hours) / 17.2%
12	Compensatory and adaptive processes	3.2	Brainstorming	30 minutes (0.5hours) / 17.2%
13	Tumors. General morphology. Classification. Epithelial tumors	3.2	Brainstorming	30 minutes (0.5hours) /

	(organ-specific)			17.2%
14	Organ-specific epithelial tumors	3.2	Discussion	30 minutes (0.5hours) / 17.2%
15	Mesenchymal tumors. Tumors from nervous and melanin-forming tissue	3.2	Interactive survey	30 minutes (0.5hours) / 17.2%
16	Final semester test	3.2	Interactive survey	30 minutes (0.5hours) / 17.2%
	Total hours V csemester	**52**		
	VI semester			
1.	Diseases of the blood system	3.3,3	Brainstorming. Mutual review of notes.	30 minutes (0.5hours) / 17.8%
2.	Atherosclerosis. Hypertension. Coronary Heart Disease	3.3,3	Brainstorming.	30 minutes (0.5hours) / 17.8%
3.	Rheumatic diseases. Heart defects	3.3,3	Interactive survey	30 minutes (0.5hours) / 17.8%
4.	Acute inflammatory diseases of the lungs. Acute pneumonias	3.3,3	Brainstorming	30 minutes (0.5hours) / 17.8%
5.	Chronic obstructive pulmonary diseases. Lung cancer	3.3,3	Brainstorming	30 minutes (0.5hours) / 17.8%
6.	Diseases of the gastrointestinal tract. Diseases of the esophagus, stomach, and intestines	3.3,3	Discussion	30 minutes (0.5hours) / 17.8%
7.	Diseases of the gastrointestinal tract. Diseases of the liver, gallbladder, and pancreas	3.3,3	Interactive survey	30 minutes (0.5hours) / 17.8%
8.	Kidney diseases. Glomerulopathy and Tubulopathy	3.3,3	Brainstorming session. Mutual review of notes.	30 minutes (0.5hours) / 17.8%
9.	Diseases of the thyroid gland. Diabetes mellitus. Pituitary and adrenal diseases	3.3,3	Interactive survey	30 minutes (0.5hours) / 17.8%
10.	Dyshormonal and inflammatory diseases of the genitals. Diseases of pregnancy and the postpartum period	3.3,3	Brainstorming. Mutual review of notes.	30 minutes (0.5hours) / 17.8%
11.	Infectious diseases. Intestinal infections. Sepsis Meningococcal infection	3.3,3	Brainstorming.	30 minutes (0.5hours) / 17.8%
12.	Airborne infections. Diphtheria. Scarlet fever. Measles. Flu.	cough 3.3,3	Interactive survey	30 minutes (0.5hours) /

	Whooping			17.8%
13.	Tuberculosis	3.3,3	Brainstorming	30 minutes (0.5hours) / 17.8%
14.	Syphilis	3.3,3	Brainstorming	30 minutes (0.5hours) / 17.8%
15.	Final semester credit	3,3,3	Discussion	30 minutes (0,5hours) / 17,8%
	Total hours VI semester	**50**		
	Total hours:	**102**		

Module: Clinical Pathological Anatomy (VII semester)

n /	**a Topic of the practical lesson**	**Labor intensity in hours**	**Interactive form of training**	**Labor intensity in hours, in % of the lesson**
1	Purpose, tasks and methods of the pathoanatomical service. Documentation. Expert work of a pathologist	3,4	Brainstorming analysis of autopsy protocols and medical records	90 min (1.5 hours) /28.8%
2	Principles of diagnosis. Structure and objectives of the International Classification of Diseases.	3.4	Small group method	90 min (1.5 hours) /28.8%
3	Principles of diagnosis. Iatrogeny.	3.4	Small group method analysis of situational problems	90 min (1.5 hours) /28.8%
4	Pathoanatomical analysis of gastrointestinal diseases	3.4	Brainstorming analysis of autopsy protocols and medical records	90 min (1.5 hours) /28.8%
5	Clinical and anatomical analysis of respiratory diseases. Tuberculosis	3.4	Discussion	90 min (1.5 hours) /28.8%
6	Pathoanatomical analysis of diseases of the cardiovascular system	3.4	Brainstorming analysis of autopsy protocols and medical records	90 min (1.5 hours) /28.8%
7	Rules for the formulation of pathoanatomical diagnosis in diseases of the digestive	system 3.4	Small group method	90 min (1.5 hours) /28.8%
8	Rules of formulation and algorithms for constructing a pathoanatomical diagnosis for tuberculosis, HIV infection and their combination	3,4	Small group method analysis of situational tasks	90 min (1.5 hours) /28.8%

9	Principles of research of biopsy, surgical material.	3.4	Brainstorming autopsy reports and case histories	90 min (1.5 hours) /28.8%
10	Final score	3.4,4	Discussion	90 min (1.5 hours) /28.8%
	Total hours:	**34**		

2.5. Criteria for evaluating learning outcomes.

Evaluation of learning outcomes is carried out in accordance with the "Regulations on the system for evaluating student learning outcomes of the Amur State Medical Academy of the Ministry of Health of the Russian Federation.

The basis for determining the level of knowledge, skills and abilities are the evaluation criteria - completeness and correctness:

- correct, accurate answer.
- correct, but incomplete or inaccurate answer
- wrong answer; no answer.

When setting marks, the following error classifications and their quality are taken into account:

- gross errors.
- similar types of errors.
- minor mistakes and shortcomings.

The success of students in mastering the topics of the discipline "Pathological Anatomy" is determined by the quality of mastering knowledge, skills and practical skills, the rating is given according to a five – point system: "5" – excellent, "4" – good, "3" – satisfactory, "2" - poor.

Evaluation criteria

The quality of development	is marked on a 5-point scale
90 - 100 %	"5"
80 - 89 %	"4"
70 - 79 %	"3"
less than 70 %	"2"

Criteria for the distribution of marks in practical classes
Module "Pathological anatomy"
5th semester

№ n /	a Topic of the practical lesson	Theoretical sky part	part Practical part	General assessment
1.	Introduction to the subject of pathanatomy. Historical stages of pathanatomy development. Parenchymal dystrophies	2-5	2-5	2-5
2	Stromal-vascular dystrophies	2-5	2-5	2-5
3	Mixed dystrophies	2-5	2-5	2-5
	Necrosis, heart attacks,	2-5	2-5	2-5

4	gangrene			
5	Final lesson on the section " Damage. Dystrophy. Necrosis"	2-5	2-5	2-5
6	Circulatory disorders: fullness of blood venous and arterial, hyperemia, stasis, bleeding	2-5	2-5	2-5
7	Circulatory disorders: thrombosis, embolism	2-5	2-5	2-5
8	Inflammation. General questions. Alternative and exudative inflammation	2-5	2-5	2-5
9	Productive inflammation: banal and specific	2-5	2-5	2-5
10	Immunopathological processes	2-5	2-5	2-5
11	Final lesson	2-5	2-5	2-5
12	Compensatory and adaptive processes	2-5	2-5	2-5
13	Tumors. General morphology. Classification. Epithelial tumors (organ-specific)	2-5	2-5	2-5
14	Organ-specific epithelial tumors	2-5	2-5	2-5
15	Mesenchymal tumors. Tumors from the nervous and melanin-forming tissue	2-5	2-5	2-5
16	Final semester credit	2-5	2-5	2-5
Average score		2-5	2-5	2-5

6th semester

№ n /	**a Topic of the practical lesson**	**Theoretical sky part**	**part Practical part**	**General assessment**
1.	Diseases of the blood system	2-5	2-5	2-5
2	Atherosclerosis. Hypertension. Coronary heart disease	2-5	2-5	2-5
3	Rheumatic diseases. Heart defects	2-5	2-5	2-5
4	Acute inflammatory lung diseases. Acute pneumonias	2-5	2-5	2-5
5	Chronic obstructive pulmonary diseases. Lung cancer	2-5	2-5	2-5
6	Diseases of the gastrointestinal tract. Diseases of the esophagus, stomach, and intestines	2-5	2-5	2-5
7	Diseases of the gastrointestinal tract. Diseases of the liver, gall bladder, pancreas	2-5	2-5	2-5
8	Kidney diseases. Glomerulopathies and tubulopathies	2-5	2-5	2-5

9	Thyroid diseases. Diabetes mellitus. Diseases of the pituitary and adrenal	glands 2-5	2-5	2-5
10	Dyshormonal and inflammatory diseases of the genitals. Diseases of pregnancy and the postpartum period	2-5	2-5	2-5
11	Infectious diseases. Intestinal infections. Sepsis Meningococcal infection	2-5	2-5	2-5
12	Airborne infections. Diphtheria. Scarlet fever. Measles. Flu. Whooping	cough 2-5	2-5	2-5
13	Tuberculosis	2-5	2-5	2-5
14	Syphilis	2-5	2-5	2-5
15	Final semester credit	2-5	2-5	2-5
GPA		2-5	2-5	2-5

Module "Clinical pathological anatomy"

№ n /	**a Topic of the practical lesson**	**Theoretical part**	**Practical part**	**General assessment**
1.	Purpose, tasks and methods of the pathoanatomical service. Documentation. Expert work of a pathologist	2-5	2-5	2-5
2	Principles of diagnosis. Structure and objectives of the International Classification of Diseases.	2-5	2-5	2-5
3	Principles of diagnosis construction. Iatrogeny.	2-5	2-5	2-5
4	Pathoanatomical analysis of diseases of the gastrointestinal tract	2-5	2-5	2-5
5	Clinical and anatomical analysis of respiratory diseases. Tuberculosis	2-5	2-5	2-5
6	Pathoanatomical analysis of diseases of the cardiovascular system	2-5	2-5	2-5
7	Rules for the formulation of pathoanatomical diagnosis in diseases of the digestive	system 2-5	2-5	2-5
8	Rules for the formulation and algorithms for constructing pathoanatomical diagnosis in tuberculosis, HIV infection and	2-5	2-5	2-5

	their combination			
9	Principles for the study of biopsy, surgical material.	2-5	2-5	2-5
10	Final score	2-5	2-5	2-5
Average score		2-5	2-5	2-5

Assessment scales of current knowledge control

The success of students in mastering the discipline (topics/sections), practical skills and abilities is characterized by a qualitative assessment and is evaluated according to a 5-point system: "5" - excellent, " 4 " - good," 3 " - satisfactory," 2 " - poor. Transfer of the mark to the point scale is carried out according to the following scheme:

The quality of development	is marked on a 5-point scale
90-100%	"5"
80-89	"4"
70-79-79	"3"
less than 70%	"2"

Criteria for evaluating (marking) the theoretical part

"5" - for the depth and completeness of mastering the content of the educational material, in which the student easily navigates, for the ability to combine theoretical questions with practical ones, express and justify their judgments, correctly and logically state the answer; when testing, they allow up to 10% of erroneous answers.

"4" - the student has fully mastered the educational material, is guided in it, correctly states the answer, but the content and form has some inaccuracies; when testing, it allows up to 20% of erroneous answers.

"3" - the student has mastered the knowledge and understanding of the main provisions of the educational material, but presents it incompletely, inconsistently, does not know how to express and justify their judgments; when testing, they allow up to 30% of erroneous answers.

"2" - the student has scattered and unsystematic knowledge of the educational material, does not know how to distinguish the main and secondary, makes mistakes in defining concepts, distorts their meaning, presents the material randomly and not confidently, and makes more than 30% of erroneous answers during testing.

Criteria for evaluating the practical part

"5" -the student has fully mastered the practical skills and abilities provided for in the work program of the discipline

"4" – the student has fully mastered the practical skills and abilities provided for in the work program of the discipline, but admits some inaccuracies.

"3" - the student has only some practical skills and abilities.

"2" - the student performs practical skills and abilities with gross errors.

Criteria for evaluating the practical session protocol

"5" – the protocol is issued according to the requirements.

"4" – the protocol was issued with some errors.

"3" - the protocol is written in illegible handwriting, preparations are drawn with errors.

"2" - the protocol is written in illegible handwriting, preparations are drawn with gross errors.

Working off debts in the discipline

If a student skips a class for a valid reason, he / she has the right to complete it and get the maximum mark provided for in the discipline's work program for this lesson. A valid reason must be documented.

If a student skips a class for a disrespectful reason or gets a "2" mark for all activities in the class, they must complete it. In this case, the mark obtained for all types of activities is multiplied by 0.8.

If a student is released from the class on the recommendation of the dean's office (participation in sports, cultural events and other events), then he is marked "5" for this lesson, provided that a report is provided on the performance of mandatory extracurricular independent work on the topic of the missed class.

Criteriafor evaluating an interim assessment

Intermediate certification is carried out in 3 stages:

1.Test control in the "Moodle" system.
https://educ-amursma.ru/course/view.php?id=426
2. Passing practical skills (competencies).
3. Responses to tickets.

Final assessment criteria (interim assessment)

Stages	Mark on a 5-point scale	Binary scale
Test control in the "Moodle"	system 3-5	5 - "excellent" 4 – "good" 3 – "satisfactory"
Passing practical skills (competencies)	3-5	
Responses to tickets	3-5	
Test control in	the Moodle2 system	2 – "poor"
Passing practical skills (competencies)	2	
Responses to tickets	2	

"5" (passed) - for the depth and completeness of mastering the content of the educational material, in which the student easily navigates, for the ability to combine theoretical questions with practical ones, express and justify their judgments, correctly and logically state the answer; when testing, allows up to 10% of erroneous answers. Practical skills and abilities provided for in the work program of the discipline are fully mastered.

"4" (passed) - the student has fully mastered the educational material, is guided in it, correctly states the answer, but the content and form has some inaccuracies; when testing, it allows up to 20% of erroneous answers. Fully practical skills and abilitiesprovided for in the work program of the discipline, but admits some inaccuracies

"3" (passed)- the student has mastered the knowledge and understanding of the main provisions of the educational material, but presents it incompletely, inconsistently, does not know how to express and justify their judgments; when testing, they allow up to 30% of erroneous answers. Has only some practical skills and abilities.

"2 "(not passed) - the student has a disjointed and unsystematic knowledge of the educational material, does not know how to distinguish the main and secondary things, makes mistakes in

defining concepts, distorts their meaning, presents the material randomly and not confidently, and makes more than 30% of erroneous answers during testing. Practical skills and abilities performs with gross errors

2.6. Independent work of students.

Module "Pathological anatomy"

Classroom independent work of students.

The organization of classroom independent work of students is carried out with the help of methodological guidelines for students, which contain educational goals, a list of basic theoretical questions to study, basic new terminology on the topic of the lesson, a list of macro-preparations, micro-preparations for sketching.

From $^{1/4}/_{4}$ to $^{1/2}/_{2}$ of the time of the practical lesson is allocated for independent work of students: drawing micro-preparations, discussing them, performing individual tasks. The preparatory stage, or the formation of an indicative basis for actions, begins for students during extracurricular time in preparation for a practical or seminar lesson, and ends during the lesson. All subsequent stages are carried out in the classroom. The stage of materialized actions (solving situational problems) is carried out independently. The teacher, if necessary, provides advice, provides assistance and simultaneously monitors the quality of students ' knowledge and their ability to apply existing knowledge to solve tasks.

Extracurricular independent work of students.

№ n /	a Topic of a practical lesson (seminar)	Time to prepare the student for the lesson	Forms of extracurricular independent work of the student	
			are mandatory and the same for all students	At the student's choice
1	2	3	4	5
1.	Introduction to the subject of pathanatomy. Historical stages of pathanatomy development. Parenchymal dystrophy	2	Reading a text (textbook, lecture, additional literature), performing written homework (synopsis)	Report on the topic: "Glycogenoses"
2	Stromal-vascular dystrophy	2	Reading text (textbook, lectures, additional literature); performing written homework	Reports on the topic: "Fatty hepatosis", "Secondary amyloidosis"
3	Mixed dystrophies	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Gout"
4	Necrosis, heart attacks,	2	Reading a text (textbook, lecture,	Preparing an abstract on the topic:

	gangrene		additional literature); performing written homework	"Osteomyelitis", "Gas gangrene"
5	Final lesson on the section " Damage. Dystrophy. Necrosis"	2	Reading the text (textbook, lecture, additional literature)	
6	Circulatory disorders: venous and arterial plethora, hyperemia, stasis, bleeding	2	Reading the text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Arterial hyperemia"
7	Circulatory disorders: thrombosis, embolism	2	Reading a text (textbook, lecture, additional literature); performing written homework; solving tests	Preparation of the abstract "Stages of thrombosis", "Pulmonary embolism"
8	Inflammation. General questions. Alternative and exudative inflammation	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Putrefactive inflammation"
9	Productive inflammation: banal and specific	2	Reading the text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Leprosy", "Scleroma", making a table "Cellular transformations in the focus of inflammation"
10	Immunopathological processes	2	Reading the text (textbook,lecture, additional literature) additional literature); performing written homework	Preparing an essay on the topic "AIDS", video presentation
11	Final lesson	2	Reading a text (textbook, lecture, additional literature)	
12	Compensatory and adaptive processes	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Vascular regeneration", "Myocardial hypertrophy"
13.	Tumors. General morphology. Classification.	2	Reading a text (textbook, lecture,	Preparing an abstract on the

	Epithelial tumors (organ-specific)		additional literature); performing written homework	topic": "Theories of the occurrence of tumors"
14.	Organ-specific tumors from the epithelium	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Breast tumors"
15.	Mesenchymal tumors. Tumors from the nervous and melanin-forming tissue	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Soft tissue sarcoma"
16.	Final semester test	2	Reading the text (textbook, lecture, additional literature); solving tests	
	Total hours	36	30	6
	VI semester			
1.	Diseases of the blood system	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Myeloma"
2.	Atherosclerosis. Hypertension. Ischemic heart	disease 2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Complications of atherosclerosis"
3.	Rheumatic diseases. Heart defects	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Congenital heart defects"
4.	Acute inflammatory diseases of the lungs. Acute pneumonias	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Staphylococcal pneumonia"
5.	Chronic obstructive pulmonary diseases. Lung cancer	2	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Morphology of asthmatic status"

6.	Diseases of the gastrointestinal tract. Diseases of the esophagus, stomach, intestines	3	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Crohn's disease", "Peptic ulcer complications"
7.	Diseases of the gastrointestinal tract. Diseases of the liver, gallbladder, pancreas	3	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing apaper on the topic: "Pancreatic necrosis" tables: "liver cirrhosis"
8.	Kidney diseases. Glomerulopathy and tubulopathy	3	Reading a text (textbook, lecture, additional literature); performing written homework	Making a table: "Classification of nephropathies"
9.	Diseases of the thyroid gland. Diabetes mellitus. Diseases of the pituitary gland and adrenal	glands 3	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: "Acromegaly"
10.	Dyshormonal and inflammatory diseases of the genitals. Diseases of pregnancy and the postpartum period	3	Reading a text (textbook, lecture, additional literature); performing written homework	Preparing an abstract on the topic: «Хорионэпите-Chorionepite-lioma
11.	Infectious diseases. Intestinal infections. Sepsis. Meningococcal infection	3	Reading a text (textbook, lecture, additional literature	) Preparing an abstract on the topic: "Septicopyemia"
12.	Airborne infections. Diphtheria. Scarlet fever. Measles. Flu. Whooping	cough 2	Reading the text (textbook, lecture, additional literature.); performing written homework	Making a table: "Measles"
13.	Tuberculosis	2	Reading the text (textbook, lecture, additional literature)	Preparing an abstract on the topic: "Pathomorphosis of tuberculosis"
14.	Syphilis	2	Reading a text (textbook, lecture, additional literature)	Making the table: "Morphology of syphilis"
15.	Final semester test	2	Reading a text (textbook, lecture, additional literature)	
	Total hours	36	30	6
Total labor intensity (in hours)			72	

Module "Clinical pathological anatomy"

Classroom independent work of students.

The organization of classroom independent work of students is carried out with the help of methodological guidelines for students, which contain educational goals, a list of basic theoretical questions to study. The stage of materialized actions (solving situational problems) is carried out independently. The teacher, if necessary, provides advice, provides assistance and simultaneously monitors the quality of students ' knowledge and their ability to apply existing knowledge to solve tasks.

Extracurricular independent work of students.

№ n /	a Topic of a practical lesson (seminar)	Time to prepare the student for the lesson	Forms of extracurricular independent work of the student	
			are mandatory and the same for all students	At the student's choice
1	2	3	4	5
1.	Purpose, tasks and methods of the pathoanatomical service. Documentation. Expert work of a pathologist	2.4	Study of documents regulating the activity of the pathoanatomical service.	Preparation of research papers on the topic of class
2.	Principles of constructing a diagnosis. Structure and objectives of the International Classification of Diseases.	2.4	Study of methodological recommendations, reading the text (textbook, lecture, additional literature)	Preparation of research papers on the topic of class
3.	Principles of diagnosis construction. Iatrogeny.	2.4	Study of methodological recommendations, reading the text (textbook, lecture, additional literature)	Preparation of research papers on the topic of class
4.	Pathoanatomical analysis of diseases of the gastrointestinal tract	2,4	, Study of methodological recommendations, reading the text (textbook, lecture, additional literature)	Preparing an abstract on the topic: Morphology of portal cirrhosis
5.	Clinical and anatomical analysis of respiratory diseases. Tuberculosis	2.4	Study of methodological recommendations, reading the text (textbook, lecture, additional literature)	Preparing an abstract on the topic: "Pathomorphosis of tuberculosis"
6.	Pathoanatomical analysis of diseases of the cardiovascular system	2,4	, Study of methodological recommendations, reading the text (textbook, lecture, additional literature)	Preparation of research papers on the topic of class
7.	Rules for the formulation of pathoanatomical	system 2.4	Study of methodological recommendations, reading	Preparation of

	diagnosis in diseases of the digestive		the text (textbook, lecture, additional literature)	research papers on the topic of the lesson
8.	Rules for the formulation and algorithms for constructing a pathoanatomical diagnosis for tuberculosis, HIV infection and their combination	2,4	; Study of methodological recommendations, reading the text (textbook, lecture, additional literature)	Preparation of research papers on the topic of class
9.	Principles of research of biopsy and surgical material.	2.4	Study of methodological recommendations, reading the text (textbook, lecture, additional literature)	Preparation of research papers on the topic of class
10.	Final score	2.4		
	Total hours:	**24**	18	6

2.7. Scientific research (project) work

Scientific research (project) work of students is a mandatory part of studying the discipline and is aimed at the comprehensive formation of universal and generalprofessional competencies of students projec provides for the study of specialized literature and other scientific and technical information on the achievements of domestic and foreign science and technology in the relevant field of knowledge, participation in scientific research, etc. The subject of project can be selected independently by students in consultation with the libo teacher from the list below, taking into account the scientific direction of the department.

List of recommended research topics:

1.Clinical and morphofunctional characteristics of the endocrine system and blood vessels in patients with diabetes mellitus;

2. Tumors and precancerous conditions of the breast;

3. Chronic pulmonary heart disease in chronic obstructive bronchitis and its effect on hemodynamics and vascular condition of various organs;

4. Morphology of the organs of immunogenesis and endocrine system in drug-resistant pulmonary tuberculosis;

5. Pathologies of the lymph nodes. Lymphogranulomatosis

6. Morphology of bronchopulmonary dysplasia and its impact on the development of lung diseases;

7. Viral pneumonia;

8. Differential morphological diagnosis of skin diseases.

9. Lung cancer.

10. Cervical cancer.

To evaluate the projec binary evaluation scale is used to evaluate research: "passed", "non-passed".

Criteria for evaluating students research work:

- material on the results of the study in the report is presented in detail, special literature is well developed, thematic literature on the problem is studied, illustrations are presented – " passed".
- the material about the research results in the report is not presented correctly enough, the special literature is poorly developed, there are no illustrations - "not passed".

3. Educational, methodological and informational support of the discipline

3.1. Basic literature

1. Strukov A. I., Serov V. V. Pathological anatomy : textbook [Pathological anatomy: textbook]. and add-ons. - Moscow: GEOTAR-Media, 2021. - 880 p.: ill. - 880 p. - ISBN 978-5-9704-6139-6. - Text: electronic (accessed: 04.05.2021). - Access mode: by subscription. http://www.studmedlib.ru/book/IS

2.Paukov V. S. Pathological anatomy : in 2 volumes. Volume 1: textbook / edited by V. S. Paukov. - 3rd ed., reprint. - Moscow: GEOTAR-Media, 2021. - 752 p. - ISBN 978-5-9704-6087-0. - Text: electronic (accessed: 04.05.2021). - Access mode: by subscription.
http://www.studmedlib.ru/book

3.Paukov V. S. Pathological anatomy : in 2 volumes. Volume 2: textbook / edited by V. S. Paukov. - 3rd ed., reprint. - Moscow: GEOTAR-Media, 2021. - 544 p. - ISBN 978-5-9704-6088-7. - Text: electronic (accessed: 04.05.2021). - Access mode: by subscription.
http://www.studmedlib

4.Pathologic anatomy: atlas [Electronic resource]: textbook. Manual for students of medical universities and postgraduate education. -
http://www.studmedlib.ru/book/ISBN9785970427804.html

3.2. Additional literature

1. Zairatyants O. V. Pathological anatomy: a guide to practical exercises: a textbook. - 2nd ed., ispr. and add. - Moscow: GEOTAR-Media, 2021. - 696 p. - ISBN 978-5-9704-6261-4. - Text: electronic (accessed: 04.05.2021). - Access mode : by subscription. http://www.studmedlib.ru/book/IS

2. Kogan E. A., Bekhtereva I. A., Orlinskaya N. Yu., Ponomarev A. B. Pathological anatomy: a guide to practical exercises: the 2nd interactive electronic educational publication of additional and revised. - Moscow: GEOTAR-Media, 2021. - Text: electronic (accessed: 04.05.2021). - Access mode : by subscription.
http://www.studmedlib.

3. Pathological anatomy: atlas: textbook. handbook for students of medical universities and postgraduate education / ed. O. V. ZairatyantsM. :, Moscow: GEOTAR-Media, 2014, 960 p. **(in Russian)**
http://www.studmedlib.ru/ru/book/ISBN9785970427804.html

4. Kogan, E. A. Pathological anatomy: a guide to practical exercises (general pathology): an interactive electronic educational publication / Kogan E. A., Bekhtereva I. A., Ponomarev A. B.- Moscow: GEOTAR-Media. - Text : electronic (accessed: 06.05.2021). - Access mode : by subscription. http://www.studmedlib.r

5.Pathologic anatomy in questions and answers [Electronic resource]: Textbook / S. A. Povzun- 2nd ed., reprint. Moscow: GEOTAR-Media Publ., 2007.
http://www.studmedlib.ru/book/ISBN9785970404126.html

6. Pathological anatomy: a guide to practical exercises [Electronic resource]: textbook. manual / Zairatyants O. V. et al.; edited by O. V. Zairatyants, L. B. Tarasova. - 2nd ed., ispr. and dop. - Moscow: GEOTAR-Media, 2015." http://www.studmedlib.ru/book/ISBN9785970432693.html

Electronic library of students: Консультант студента-
http://www.studmedlib.ru/ru/kits/mb4/studmedlib_core/ed_med_hi-esf2k2z11-select-0021.html

3.3 Materials used in teaching students (prepared by the department staff)

Physical materials:

1. A selection of photos of macro preparations
2. Photo report of autopsies (interesting cases from practice)
3. Sets of slide scans on all topics of general and private pathological anatomy.

4. Electronic archive of micro-preparations for practical training in all sections of general and private pathological anatomy

3.4. List of equipment used in teaching students:

n /	a Name (quantity)
	Study room No. 9
1.	Study room of the Department of Pathological Anatomy with a course of forensic medicine. Main equipment: TV – 1 Remote control – 1 Metal cabinet – 1 Extension Cable – 3 Study table-7 Teacher's table – 1 Chairs-20 Stands – 2 Posters – 137 Macro preparations – 55 Microscopes – 5 USB – 1 Blackboard – 1 Metal rack – 2
2.	**Study room No. 14**
	Study room of the Department of Pathological Anatomy with a course of forensic medicine. Main equipment: TV – 1 Remote control – 1 metal cabinet – 1 Extension cable – 1 study table-7 Teacher's table – 1 Chairs-15 Stands-3

	Posters-159 Macro preparations-61 Electronic microscopes-5 Light Microscopes - 3 USB – 1 Blackboard – 1 Metal rack-2
3	**Study room No. 15** Study room of the Department of Pathology anatomy with a course in forensic medicine. Main equipment: TV – 1 Remote control – 1 metal cabinet – 1 Extension cable – 1 study table-7 Teacher's table – 1 Chairs-17 Stands-2 Posters-180 Macro preparations – 90 Microscopes-6 USB – 1 Blackboard – 1 Metal rack-2
4	**Study room No. 16** Study room of the Department of Pathological Anatomy with a course of forensic medicine. Main equipment: Metal cabinet – 1 Extension cable – 2 Study table-8 Teacher's table – 1

	Chairs-17 Stands-1 Posters-203 Macro preparations-284 Electronic Microscopes-6 Light Microscopes – 2 USB – 1 Blackboard – 1 Screen-1 Laptop-1 Projector – 1 Metal rack – 4
5	Study room Department of Pathological Anatomy with a course in forensic Medicine. (Amur Regional Clinical Hospital, 26/1 Voronkova 26/1str., patologoanatomic department) Main equipment: Teacher's table – 1 Study table – 5 Chairs-11

3.5. Professional databases, information reference systems, electronic educational resources

Resource name Resource	description	Access	Resource address
Electronic library systems			
"Student consultant" Electronic library of a medical university.	For students and teachers of medical and pharmaceutical universities. Provides access to electronic versions of textbooks, manuals, and periodicals.	library, individual access	http: / /www .studmedlib.ru /
"Doctor's Consultant" Electronic Medical Library.	The materials placed in the library are developed by leading Russian specialists on the basis of modern scientific knowledge (evidence-based	library, individual access	http://www.rosmedlib.ru /cgi-bin/mb4x/cgi-bin/mb4x

	medicine). The information was prepared taking into account the position of the scientific and practical medical society (world, European and Russian) in the relevant specialty. All materials have passed mandatory independent review.		
PubMed	is a free search engine in the largest medical bibliographic database MedLine. Documents medical and biological articles from specialized literature, as well as links to full-text articles.	library, free access	http://www.ncbi.nlm.nih.gov/pubmed://www.ncbi.nlm.nih.gov/pubmed/
Oxford Medicine Online.	A collection of Oxford Publishing House publications on medical topics, combining more than 350 publications in a common resource with the ability to cross-search. Publications include The Oxford Handbook of Clinical Medicine and The Oxford Textbook of Medicine, whose electronic versions are constantly updated.	library, free access	http://www.oxfordmedicine.com
Knowledge base on human biology	Reference information on physiology, cell biology, genetics, biochemistry, immunology, pathology. (Resource of the Institute of Molecular Genetics of the Russian Academy of Sciences.)	library, free access	http://humbio.ru/Медицинская
online library	- Free reference books, encyclopedias, books, monographs, essays, English-language literature, tests.	library, free access	http://med-lib.ru/Информационные
systems			
Russian Medical Association	Professional Internet resource. Objective: to promote effective professional activity of medical personnel. It contains the charter, personnel, structure, membership rules, and information about the Russian Medical Union.	library, free access	http://www.rmass.ru/
Web-medicine	The site presents a catalog of professional medical resources, including links to the most authoritative thematic sites, journals, societies, as well as useful documents and programs. The site is intended for doctors, students, and employees of medical universities and research institutions.	library, free access	http: //webmed.irkutsk.ru /

Databases			
World Health Organization Databases	The site contains news, statistics on countries that are members of the World Health Organization, newsletters, reports, WHO publications and much more.	library, free access	http://www.who.int/ru/
Ministry of Science and Higher Education of the Russian Federation	The website of the Ministry of Science and Higher Education of the Russian Federation contains news, newsletters, reports, publications and much more.	library, free access	http://www.minobrnauki.gov.ru
Ministry of Education of the Russian Federation.	The website of the Ministry of Education of the Russian Federation contains news, newsletters, reports, publications and much more.	library, free access	https://edu.gov.ru/Федеральный
Federal portal The Russian Education portal	is a single window of access to educational resources. This portal provides access to textbooks on all branches of medicine and healthcare.	library, free access	http: / /www .edu.ru/ http://window.edu.ru/catalog/?p rubr=2.2.81.1
Bibliographic databases			
The database "Russian Medicine"	is created in the Central Library of Medicine and covers the entire fund, starting in 1988. The database contains bibliographic descriptions of articles from domestic journals and collections, dissertations and their abstracts, as well as domestic and foreign books, collections of proceedings of institutes, conference materials, etc. Thematically, the database covers all areas of medicine and related areas of biology, biophysics, biochemistry, psychology, etc	library, free access	. http://www.scsml.rssi.ru/eLibrary.
RU	Russian information portal in the field of science, technology, medicine and education, containing abstracts and full texts of more than 13 million scientific articles and publications. On the eLibrary platform.RU electronic versions of more than 2000 Russian scientific and technical journals are available, including more than 1000 open access journals.	library, free access	http://elibrary.ru/defaultx.asp
Portal Electronic Library of dissertations	Currently, the Electronic Library of Dissertations of the RSL contains more than 919,000 full texts of dissertations and abstracts.	library, free access	http://diss.rsl.ru/?menu=disscatalog /

Medline.<	url> Medical and biological portal for specialists. Biomedical Journal. Last updated February 7, 2021	Library, free access	http://www.medline.ru

Electronic library of students: Student consultant

http://www.studmedlib.ru/ru/kits/mb4/studmedlib_core/ed_med_hi-esf2k2z11-select-0021.html

1. http://www.studmedlib.ru/book/ISBN9785970435519.html
2. http://www.studmedlib.ru/book/ISBN9785970432532.html
3. http://www.studmedlib.ru/book/ISBN9785970427804.html
4. http://www.studmedlib.ru/book/ISBN9785970404126.html
5. http://www.studmedlib.ru/book/ISBN9785970432693.html

3.6. Licensed and freely distributed software used in the educational process

I. Commercial software products		
1.	Operating system MS Windows 7 Pro	License number 48381779
2.	Operating system MS Windows 10 Pro, MS Office	CONTRACT No. 142 A dated 25.12.2019
3.	MS Office	License Number: 43234783, 67810502, 67580703, 64399692, 62795141, 61350919
4.	Kaspersky Endpoint Security for Business Extended	Agreement No. 977 po / 20 dated 24.12.2020
5.	1S:University PROF	LICENSE AGREEMENT No. 2191 dated 15.10.2020
6.1	C: Library PROF	LICENSE AGREEMENT No. 2281 dated 11.11.2020
II. Free Software Distribution		
1.	Google Chrome	Free Software Distribution Terms and Conditions: https://play.google.com/about/play-terms/index.html
2.	Yandex Browser	A free-to -use License Agreement for the use of Yandex Browser programs https://yandex.ru/legal/browser_agreement/3.Dr.Web
3.	CureIt!	Free-to-distribute License Agreement: https://st.drweb.com/static/new-www/files/license_CureIt_ru.pdf
4.	OpenOffice	Free Redistributable License: http://www.gnu.org/copyleft/lesser.html
5.	LibreOffice	Free Redistributable License: https://ru.libreoffice.org/about-us/license/

3.7. Resources of the Internet information and telecommunications network

1.https://meduniver.com/Medical/gistologia/3.html
2.https://dommedika.com/ftiziatria/morfologia_tuberkuleza.html
3.http://vmede.org/sait/?id=Anatomija_patologicheskaja_strukov_2010&menu=Anatomija_patologicheskaja_strukov_2010&page=6
4.http://vmede.org/index.php?topic=109.0
5.http://shporgaloshka.ucoz.ru/patologicheskaja_anatomija-konspekt_lekcij.pdf
6.http://bme. org / index. php / PATHOLOGICAL_ANATOMY

4. EVALUATION FUNDS FUND

4.1. Current test control (input, output), final.

4.1.1 Examples of input control test tasks (with response standards)

Test tasks are located in the "Moodle" system.
Access mode for the 5th semester: https://educ-amursma.ru/course/view.php?id=426
(choose one correct answer)

1. THROUGH WHICH VEINS ARTERIAL BLOOD FLOWS:
   1) abdominal;
   2) lung diseases.
   3) dorsal;
   4) grudny

2. GAMETOGENESIS IS:
   1) destruction ofsomatic cells;
   2) pazmultiplication of gametes;
   3) cgamete fusion;
   4) theprocess of gamut formation and maturationт

3. WHO DISCOVERED THE FOLLOWING BLOOD TYPES:
   1) V. Harvey;
   2) I. P. Pavlov;
   3) Schwann
   4) Landsteiner

Response standardsов: 1-2; 2-4; 3-4

Test tasks are located in the "Moodle" system.
Access mode for the 6th semester: https://educ-amursma.ru/mod/quiz/view.php?id=8972
(choose one correct answer)

1.WHAT IS THE LEUKOCYTE FORMULA:
   1) %ratio of individual types of leukocytes;
   2) % ratio of white blood cells to red blood cells;
   3) % ratio of eosinophils to neutrophils;
   4) % ratio of shaped blood elements to each other

2.TRANSFUSIONS OF INCOMPATIBLE BLOOD CAN CAUSE:
   1) reduced osmotic density of red blood cells;
   2) increased oncotic blood pressure;

3) blood transfusion shock;
4) slowing of blood ESR

3. A HORMONE THAT HAS A PREDOMINANT EFFECT ON PROTEIN METABOLISM:
1) thyroxine;
2) atiuretic;
3) insulin;
4) adrenaline rush

Response standards: 1-1; 2-3; 3-1

Test tasks are located in системе the "Moodle" system.

Access mode for the 7th semester: https://educ-amursma.ru/mod/quiz/view.php?id=10597

(choose one correct answer)

1.NAME THE HEMOGLOBINOGENIC PIGMENT THAT HAS A VALUE IN IRON EXCHANGE:
1) hemomelanin;
2) ferritin;
3) hematin;
4) lipofuscin

2. GIVE A DEFINITION OF THROMBOSIS:
1) circulation of foreign particles in the blood or lymph;
2) blood clotting after death;
3) blood clotting in the pericardial cavity;
4) intravital blood clotting in the lumen of the vessel or cavities of the heart;

3. WHICH PROCESS IS CONSIDERED COMPENSATORY AND ADAPTIVE:
1) hypermelanosis;
2) hemorrhage
3) regeneration;
4) colliquation.

Response standardsов: 1-2; 2-4; 3-3

4.1.2 Examples of output control test tasks (with response standards)

Test tasks are located in the "Moodle" system.

Access mode for the 5th semester: https://educ-amursma.ru/course/view.php?id=426

(choose one correct answer)

1. DYSTROPHY IS CALLED:
5) restoration of lost tissue;
6) oxygen starvation;
7) metabolic disorders with structural damage;
8) local death

4. INCREASED KERATINIZATION OF THE SKIN IS CALLED:
1) acanthosis;
2) leukoplakia;
3) parakeratosis;
4) hyperkeratosis

5. THE MORPHOGENETIC MECHANISM OF PARENCHYMAL DYSTROPHY DEVELOPMENT IS:
   1) blockade of the tricarboxylic acid cycle;
   2) hypoxia;
   3) lipid peroxidation;
   4) decomposition

Response standards: 1-3; 2-4; 3-4

Test tasks are located in the "Moodle" system.
Access mode for the 6th semester: https://educ-amursma.ru/course/view.php?id=568

(choose one correct answer)

1. CLINICAL AND MORPHOLOGICAL FORM OF HYPERTENSION:
   1) celezenochnaya;
   2) gand pituitary;
   3) mesenteric;
   4) mof ram

2. MORPHOLOGICAL STAGE OF DEVELOPMENT OF ATHEROSCLEROSIS:
   1) distrophic;
   2) gialinosis;
   3) metabolic;
   4) dolipidnaya

3. WHAT IS TYPICAL FOR A PRIMARY SHRIVELED KIDNEY:
   1) increased size, bumpy surface.
   2) fine-grained surface.
   3) expansion of the cortex;
   4) expansion of the pelvis and calyces

Response standardsов: 1-4; 2-4; 3-2

4.1.3 Examples of final control test tasks (with response standards)

Test tasks are located in the "Moodle" system.
Access mode for the 5th semester: https://educ-amursma.ru/mod/quiz/view.php?id=3593

(choose one correct answer)

1. DEFINITIONOF HYPERTROPHY:
   1) restorationof the lostinter-exchange tissue;
   2) transition from one type of fabric to another;
   3) reducing the volume of tissue cells, organ;
   4) increase in the volume of tissue cells, organ;

2. FORMS OF REGENERATION:
   1) vicar, compensatory;
   2) cellular, intracellularная;
   3) hyperplastic;
   4) working

3. INFLAMMATION OF CAVITIES WITH ACCUMULATION OF PUS IN THEM:

1) empyema.
2) pyuria.
3) hematoma
4) hydrocephalus;

Response standardsoв: 1-4; 2-2; 3-1

Test tasks are located in the "Moodle" system.
Access mode for the 6th semester: https://educ-amursma.ru/mod/quiz/view.php?id=10594
(choose one correct answer)

1. THE ENTRY GATE OF INFLUENZA INFECTION IS:
   1) the mucous membrane of the large intestine;
   2) mucosa of the trachea, bronchi;
   3) the mucous membrane of the small intestine;
   4) nasal mucosa, conjunctiva

2. ORGANS WHERE APUDOMAS ARE LOCALIZED:
   1) lungs, stomach, and thyroid gland.
   2) spinal cord, peripheral nerves;
   3) kidneys, bladder;
   4) limbs

3. THE PATHOGENETIC FACTOR CHARACTERISTIC OF CORONARY HEART DISEASE IS:
   1) hyperglycemia;
   2) hyperlipidemia;
   3) venous hyperemia;
   4) dysproteinemia

Response standardsoв: 1-4; 2-1; 3-2

Test tasks are located in the "Moodle" system.
Access mode for the 7th semester: https://educ-amursma.ru/mod/quiz/view.php?id=10596
(choose one correct answer)

1. THE MAIN CAUSE OF DEATH IN ACUTE BRONCHITIS:
   1) chronic heart failure;
   2) chronic pulmonary heart failure;
   3) acute pulmonary insufficiency;
   4) chronic pulmonary insufficiency

2. THE MOST COMMON PATHOGENESIS OF CHRONIC GLOMERULONEPHRITIS IS:
   1) hematological department.
   2) non-immunological;
   3) metabolic;
   4) immunologically determined

3. FAVORABLE OUTCOME OF SYPHILITIC GUM:
   1) ulcers.
   2) formation of fistulas;
   3) scarring;

4) necrosis

response standardsов: 1-2; 2-4; 3-3

4.2. Examples of situational tasks of current control.

Module "Pathological anatomy"

Task 1. What pathology should be consideredif histological examination of the liver reveals vacuoles filled with cytoplasmic fluid in the cytoplasm of enlarged hepatocytes, which displaces the cell nucleus to the periphery?

Answer: Hydropic(watery)liver dystrophy.

Task 2. The liver is enlarged in size, dense consistency, dark green in the section. Histologically, bile clots are detected. Your diagnosis.

Answer: Subhepatic jaundice.

Task 3. A 65-year-old patient suffering from atherosclerosis developed pain in the right leg, the tissues of the first toe became swollen, black in color, the epidermis exfoliated, and discharge with an unpleasant smell appeared. What clinical and morphological form of necrosis has developed in the patient? What kind of shape is this?

Answer: Wet gangrene of the limb.

Module: "Clinical pathological anatomy"

Task 1. A patient with tuberculosis died of pulmonary heart failure. The autopsy revealed interstitial myocarditis, multiple foci the size of millet grains in the lungs, liver and spleen.

Questions and tasks:

1. Name changes in the lungs, liver, and spleen.
2. What are these "pockets" called?
3. What tissue reaction do they reflect?
4. What is included in this education?
5. What is the outcome of this education?

Responses:

1. Changes in the lungs, liver, and spleen are called miliary tuberculosis.
2. "Foci" are called granulomas.
3. They reflect the tissue response – productive.
4. The structure of this formation includes: caseous necrosis, epithelioid cells, lymphocytes and Pirogov-Langhans cells.
5. The outcome of this formation is scarring.

Task 2. A 46-year-old man, after hypothermia, suddenly felt a sharp pain in the left side of the chest, shortness of breath, headache and muscle pain, chills; temperature 39.2^0C. He was admitted to the clinic on the 3rd day of his illness. The examination revealed a lack of breathing in the upper lobe of the left lung, pleural friction noise, tachycardia, neutrophilic leukocytosis, and an increase in ESR. Despite the treatment, after 2 weeks the patient has a cough with purulent sputum, chest pain on the left, temperature 38.5^0C.

Questions and tasks:

1. What disease did the patient develop?
2. Stage of the disease?
3. What is the cause of pleural friction noise?
4. Name the complication that occurred in the patient.
5. List possible extrapulmonary complications.

Responses:

- The patient developed lobar pneumonia.
- The stage of the disease is the stage of gray hepatosis.
- Pleural friction noise is associated with fibrinous pleurisy.
- A complication that occurred in the patient is a lung abscess.

- Possible extrapulmonary complications: pericarditis, mediastinitis, peritonitis, purulent arteritis, purulent meningitis.

Task 3. An 80-year-old patient was admitted to the clinic with progressive heart failure. In the anamnesis-2 years ago transmural myocardial infarction. The examination revealed a significant expansion of the heart's borders, pulsation of the heart in the apical region, shortness of breath, cough with rusty sputum, an increase in the size of the liver, and edema. Suddenly, right-sided hemiplegia developed.

Questions and tasks:

1. What group does a chronic heart aneurysm belong to?
2. Name the diseases that belong to the same group of diseases.
3. What is the frequent location of a chronic heart aneurysm?
4. What is the wall of a chronic aneurysm?
5. What are the complications and possible causes of death in a chronic heart aneurysm?

Responses:

1. Chronic heart aneurysm belongs to the group of chronic ischemic heart diseases.
2. Diseases related to the same group of diseases: large-focal cardiosclerosis, diffuse small-focal cardiosclerosis, ischemic cardiomyopathy.
3. Frequent localization of chronic heart aneurysm: anterior wall of the left ventricle, apex of the heart.
4. The wall of a chronic aneurysm is represented by scar tissue.
5. Complications and possible causes of death in chronic heart aneurysm: chronic heart failure, rupture of the aneurysm wall with hemopericardium, thromboembolic complications, repeated myocardial infarction.

Task 4. A 55-year-old patient underwent gastroscopy due to epigastric pain, nausea, and the appearance of dark-colored feces (melena), and an ulcer with a diameter of 6 cm with roller-like edges and a sinking central part covered with gray plaque was found in the area of small curvature of the stomach. A biopsy was taken, which revealed cancer. A gastric resection operation with a large and small omentum was performed.

Questions and tasks:

1. Name the macroscopic form of stomach cancer.
2. What growth in relation to the lumen of the stomach is characteristic of it?
3. What histological type of cancer is most often found in this form of stomach cancer?
4. Why are the large and small omentas removed along with the stomach?
5. Where else can I look for lymphogenic metastases of stomach cancer?

Responses:

1. Macroscopic form of gastric cancer – pancake- ϭlike.
2. Growth in relation to the lumen of the stomach is exophytic.
3. The histological type of cancer that is most often found in this form of stomach cancer is adenocarcinoma.
4. Together with the stomach, the large and small omentas were removed, because they contain regional lymph nodes, which are primarily metastasized to by stomach cancer.

4.3 List of practical skills that a student should possess after mastering the discipline Module "Pathological anatomy"

1. Distinguish organs of normal structure from pathological changes during macroscopic examination.
2. Be able to describe pathological changes and draw conclusions in terms of diagnosis.
3. Be able to describe and sketch micro-preparations for various pathological processes.
4. Description of morphological manifestations of general pathological processes on macro-preparations.

5. Know the morphology, morphogenesis, and thanatogenesis of nosological units that are provided by the program.
6. Be able to distinguish the most important signs most often in practice
diseases that occur, formulate a diagnosis.

4.4 List of exam questions for the 6th semester (3rd year).

1. Historical development of pathological anatomy in Russia.
2. Historical stages of development of foreign pathological anatomy (Morgagni, Rokitansky, Virchow, Aschoff, Mallory, Babesh, etc.)
3. Methods and content of pathological anatomy.
4. Clinical and anatomical direction in pathanatomy.
5. Death of an organism, developmental phases, signs of death, postmortem changes.
6. Definition of the essence of the disease. Nosology and nomenclature of diseases. The concept of age-related reactivity.
7. The concept of general and local circulatory disorders, their interrelation, classification.
8. Venous plethora, its types, changes in internal organs.
9. General venous plethora: cause, pathogenesis, morphology, significance, and outcomes.
10. Morphology of acute and chronic heart failure.
11. Local venous congestion: pathogenesis, morphology, meaning.
12. Arterial plethora: types, morphology, meaning.
13. Anemia (ischemia): causes, types, and outcomes.
14. Stasis: pathogenesis, morphology.
15. Definition, pathogenesis and morphology of infarction.
16. Morphological features of infarcts of the brain and lungs.
17. Insufficiency of lymph circulation, violation of the content of tissue fluid, their causes and types.
18. Bleeding (hemorrhage): their mechanism and morphology, outcomes and significance.
19. Thrombosis: causes, types, mechanism and factors of thrombosis formation.
20. Thrombus morphology, outcomes and significance of thrombosis.
21. Embolism: its types, morphological characteristics.
22. Pulmonary embolism, its morphology, outcomes.
23 Necrosis: nature, classification, clinical and morphological forms, outcomes.
24. Atrophy: causes, types, morphology.
25. Dystrophy: essence, causes, classification.
26. Parenchymal protein dystrophies: types, morphology, disorders of amino acid metabolism (phenylketonuria, tyrosinosis).
27. Parenchymal fatty degenerations: types, morphology (Gaucher's disease, Niemann-Pick's disease, Tay-Sachs ' disease).
28. Parenchymal carbohydrate dystrophies: types, morphology. Disorders of glycogen metabolism. Diabetes, glycogenosis (Gierke's disease, Pompe's disease).
29. Stromal-vascular dystrophies: types, general characteristics.
30. Extracellular dysproteinosis: mucoid, fibrinoid swelling. ПроцессыThe underlying processes.
31. Hyalinosis: pathogenesis, morphology, meaning.
32. Amyloidosis: classification. Morphology.
33. Stromal-vascular fatty degenerations: types, morphology.
34. Stromal-vascular carbohydrate dystrophy.
35. Violation of pigment metabolism. Causes, classification, metabolic disorders of hemoglobinogenic pigments, their morphology.
36. Jaundice: types, morphology, outcomes.
37. Violation of the exchange of proteinogenic and lipidogenic pigments.

38. Violation of the exchange of nucleoproteins: types, morphology.
39. Calcium metabolism disorders: types, causes, morphology.
40. Stone formation: mechanism, causes, types of stones, morphology.
41. Inflammation: causes, pathogenesis, classification, morphology, meaning.
42. Exudative inflammation: types, morphology, outcomes.
43. Productive inflammation: types, morphological characteristics.
44. Fibrinous inflammation: types, causes, outcomes.
45. Purulent inflammation: causes, types, outcomes.
46. Specific inflammation: causes, types, difference from the banal.
47. Immunomorphology of central and peripheral immune organs. Immunopathological processes. Local allergic reactions, autoimmune diseases.
48. Compensatory-adaptive processes: essence, variety. Regeneration: forms, types, and morphology.
49. Regeneration of individual organs and tissues. The essence of metaplasia.
50. Organizational processes: mechanisms, types, morphology.
51. Hypertrophy and hyperplasia: causes, types, mechanism of development, morphology.
52. Definition the concept of a tumor, the difference between tumor growth and other types of growth. Tumor atypism.
53. Appearance, structure and growth of tumors. Theories of tumor growth.
54. Morphological characteristics of benign and malignant tumors.
55. Tumors from the epithelium: types, morphology. Skin cancer: histological characteristics, features of the course of basal cell carcinoma.
56. Connective tissue tumors: types, morphology.
57. Dysontogenetic tumors: hamartomas and hamartoblastomas.
58. Metastasis of tumors: types, patterns. The concept of relapse. Secondary changes in the tumor.
59. Tumors from cambial embryonic tissues.
60. Atherosclerosis: etiology, pathogenesis, morphology. Contribution of Russian pathologists to the study of atherosclerosis.
61. Atherosclerosis: stages, clinical and morphological forms, their characteristics, causes of death.
62. Hypertension: etiology, pathogenesis, stages, morphology. Secondary hypertension, its main types.
63. Hypertension: clinical and morphological forms, causes of death. Morphology of hypertensive crisis.
64. Morphology of cerebral circulatory disorders in hypertension and atherosclerosis.
65. CHD: definition, association with atherosclerosis and hypertension.
66. CHD: etiology, pathogenesis, classification.
67. Acute ischemic heart disease: morphology, complications, causes of death in myocardial infarction.
68. Chronic ischemic heart disease: morphological characteristics, complications, causes of death.
69. Connective tissue diseases with immune disorders (rheumatic): types, general characteristics, and specific features of each of them.
70. Rheumatism: etiology, pathogenesis, pathological anatomy, clinical and morphological forms.
71. Rheumatoid arthritis. Primary and secondary vasculitis: causes, mechanism of development, morphology outcome.
72. Congenital and acquired heart defects. The main changes in the heart with defects and their causes.

73. Acute pneumonias, their types. Croup pneumonia: etiology, pathogenesis, pathanatomy, complications, outcomes.
74. Focal pneumonia. Etiology, pathogenesis, types, pathanatomy, complications, outcomes.
75. Staphylococcal pneumonia: features, morphology, outcomes.
76. Chronic non-specific lung diseases. General characteristics. Chronic bronchitis.
77. Hypertension of the small circulatory system (pulmonary hypertension, primary and secondary). Pathogenesis, morphological characteristics of changes in the lungs and heart.
78. Bronchial asthma: etiology, pathogenesis, pathanatomy, complications.
79. Lung cancer: classification, precancerous conditions, histological forms, complications.
80. Anemia: causes, types, pathogenesis. Hemorrhagic syndromes: causes, morphology, and complications.
81. Hemolytic disease of newborns: etiology, pathogenesis, forms, outcomes.
82. Leukemias: definition, causes, classification. Acute leukemia: types, main clinical and morphological manifestations.
83 Myeloma: types, morphology, complications.
84. Regional tumor diseases of the lymphoid tissue. Lymphogranulomatosis: forms, morphology.
85. Angina: etiology, types, pathanatomy, complications.
86. Esophageal cancer: classification, morphological manifestations.
87. Gastritis: causes, morphology, types, outcomes.
88. Peptic ulcer of the stomach and duodenum 12: etiology, pathogenesis, morphological manifestations, outcomes, complications.
89. Stomach cancer: precancerous conditions, pathological anatomy, complications.
90. Intestinal diseases. Acute and chronic enteritis: etiology, pathogenesis, morphology, complications. Characteristics of enteritis forms according to enterobiopsy data. Enteropathies: types, morphology. Whipple's disease. Acute and chronic colitis: etiology, pathogenesis, morphology, complications.
91. Intestinal tumors: precancerous conditions, morphology, outcomes.
92. Appendicitis: morphology, classification, outcomes, complications.
93. Peritonitis: types, causes, morphology, outcomes.
94. Toxic liver dystrophy: etiology, pathogenesis, morphology, complications.
95. Cirrhosis of the liver: etiology, pathogenesis, classification, morphological characteristics of individual species.
96. Outcomes and complications of liver cirrhosis. Morphology of portal hypertension. Causes of death in cirrhosis.
97. Pancreatitis: etiology, types, morphology, complications.
98. Classification of nephropathies. Primary and secondary nephrotic syndrome.
99. Glomerulonephritis: classification, etiology, pathogenesis, outcomes, complications.
100. Outcomes and complications of chronic glomerulonephritis. Morphology of chronic renal failure.
101. Classification of glomerulopathies. Amyloidosis of the kidneys: etiology, morphology, outcomes, complications.
102. Classification of tubulopathies. Acute renal failure (necrotic nephrosis): etiology, morphology, and complications.
103. Interstitial nephritis and pyelonephritis: etiology, pathogenesis, morphology, outcomes.
104. Uremia: etiology, morphology.
105.Kidney stone disease: etiology, pathogenesis, morphology, outcomes, complications.
106. Goiter: definition, classification, clinical and morphological characteristics, outcomes, complications. Features of goiter in the Amur region.
107. Adrenal insufficiency: etiology, pathogenesis, causes of death in Addison's disease.
108. Diabetes mellitus: etiology, pathogenesis, morphology, causes of death.

109. Gestosis of pregnant women. Eclampsia: pathogenesis, morphology, causes of death.
110. Bubble drift. Chorionic epithelioma. Placental polyp. Birth infection of the uterus.
111. Ectopic pregnancy: types, etiology, outcomes, complications.
112. Breast cancer: pathological anatomy, features of metastasis.
113. Cancer of the body and cervix: precancerous conditions, morphology, complications.
114. Infectious diseases: definition, general morphology, classification, pathomorphosis.
115. Typhoid fever: etiology, morphology, outcomes, complications.
116. Dysentery: etiology, pathogenesis, morphology.
117. Dysentery: complications, atypical forms, outcomes.
118. Amoebic dysentery: etiology, pathogenesis, morphology, complications.
119. Salmonellosis: types, etiology, pathogenesis, morphology, outcomes.
120. Cholera: forms, complications, and outcomes.
121. Anthrax: etiology, pathogenesis, pathological anatomy, complications, causes of death.
122. Plague: etiology, pathogenesis, forms, morphology, complications, causes of death.
123. Sepsis: definition, etiology, pathogenesis, classification. Umbilical sepsis.
124. Sepsis: clinical and anatomical forms, morphology, complications, causes of death.
125. Prolonged septic endocarditis: pathological anatomy, causes of death, complications.
126. Epidemic typhus: features of infection, significance.
127. Brucellosis: etiology, pathogenesis, outcomes.
128. Viral hepatitis (Botkin's disease): etiology, forms, morphology, complications, outcomes.
129. Echinococcosis. Clonorchiasis. Opisthorchiasis. Pathogenesis, pathanatomy, causes of death.
130. Hemorrhagic nephro-nephritis: etiology, pathogenesis, pathanatomy, outcomes.
131. Viral diseases, features of infection. General morphological characteristics.
132. Acute respiratory viral infections: influenza, parainfluenza, respiratory syncytial pneumonia. Etiology, pathogenesis, pathological anatomy, complications, causes of death.
133. Measles: etiology, pathogenesis, pathological anatomy, complications and outcomes.
134. Poliomyelitis: etiology, pathogenesis, morphology, complications.
135. Chickenpox: etiology, pathogenesis, morphology, outcomes.
136. Whooping cough: etiology, pathogenesis, morphology, complications, outcomes.
137. Diphtheria: etiology, pathogenesis, clinical and morphological manifestations, complications, outcomes, causes of death.
138. Scarlet fever: etiology, pathogenesis, clinical and morphological manifestations, complications of the first and second periods of the disease, outcomes.
139. Meningococcal infection: etiology, pathogenesis, forms, morphology, complications, outcomes.
140. Mumps: etiology, pathogenesis, morphology, complications, outcomes.
141. Tularemia: etiology, pathogenesis, morphology.
142. Tuberculosis: etiology, pathogenesis, classification.
143. Primary tuberculosis: pathological anatomy, outcomes, complications.
144. Hematogenic tuberculosis: classification, morphology, causes of death, complications.
145.Secondary tuberculosis: classification, morphology, causes of death.
146. Syphilis: etiology, pathogenesis, classification, pathological anatomy, outcomes, complications.
147. Congenital syphilis: causes, classification, pathanatomy.
148. Fungal infections: candidiasis, actinomycosis and their pathological anatomy.
149. Hemolytic disease of newborns.
150. Iatrogenic pathology: concept, classification.
151. Intrauterine TORCH infection: toxoplasmosis, chlamydia infection, rubella. Etiology, pathogenesis, pathomorphology, outcomes.

152. Intrauterine TORCH infection: cytomegalovirus infection, herpetic infection. Etiology, pathogenesis, pathomorphology, outcomes.
153. Perinatal pathology. Neonatal asphyxia, fetal asphyxia, pneumopathies. Etiology, pathogenesis, and pathomorphology.

List of questions for the test:

Module "Clinical pathological anatomy" for the 7th semester (4th year):

1. Fundamentals of the current legislation on health care and the pathoanatomical service, the procedure for conducting a pathoanatomical autopsy of a corpse.
2. Basic principles of classification of diseases.
3. The concept of diagnosis, principles of constructing a clinical and pathoanatomical diagnosis and clinical-anatomical comparison.
4. Significance and methods of investigation of biopsy and surgical material.
5. Principles of organization of the commission for the study of fatal outcomes, the work of the treatment and control commission and clinical and anatomical conferences.
6. Visually assess and be able to record changes in the organs and tissues of the corpse.
7. Formulate a pathoanatomical diagnosis, conduct a clinical and anatomical comparison, and give an opinion on the cause of death.
8. Determine the category and reason for the discrepancy between clinical and pathoanatomical diagnoses.
9. Fill out a medical death certificate, a medical certificate of perinatal death.
10. Collect, label and send the biopsy or surgical material for histological examination.

4.5 List of examination micro-preparations

1. Nutmeg liver
2. Venous congestion and pulmonary edema
3. An organized blood clot
4. Ischemic infarction in the kidney
5. Brown lung induration (heme-eosin)
6. Brown lung induration (Perls region)
7. Measles pneumonia
8. Old brain hemorrhage
9. Emphysema of the lungs
10. Diphtheria colitis in dysentery
11. Lymph node caseosis
12 Necrotic nephrosis
13. Myocardial infarction
14. Hydropic dystrophy
15. Hyalinosis of spleen arterioles
16. Amyloidosis of the kidney
17. Lipofuscin in nerve cells
18. Alcoholic hepatitis
19. True croup in the bronchi
20. Tuberculous tubercles in the lung
21. Miliary bumps in the wall of the small intestine
22. Glandular erosion of the cervix
23. Glandular endometrial hyperplasia
24. Uterine leiomyoma
25. Muscle trichinosis
26. Papillary adenocystoma of the ovary
27. Breast Fibroadenoma 28. Melanoma
29. Squamous ocell corneal cancer
30. Basal cell carcinoma
31. Cancer metastasis to the lymph node
32. Coronary artery atherosclerosis
33. Renal vascular elastosis
34. Arteriol-sclerotic nephrosclerosis
35. Rheumatism
36. Rheumatoid arthritis
37. Croup pneumonia (red bowel movement)
38. Croup pneumonia (gray matter)
39. Focal pneumonia
40. Lung silicosis
41. Stomach ulcer
42. Toxic liver dystrophy
43. Portal cirrhosis of the liver
44. Phlegmonous appendicitis
45. Chronic appendicitis
46. Extracapillary glomerulonephritis
47. Pyelonephritis
48. Bronchial asthma
49.Lymphogranulomatosis
50. Tubal pregnancy
51. Purulent meningitis
52.Bubble drift
53. Thyrotoxic goiter
54. Warty endocarditis
55. Liver in lymphocytic leukemia
56. Brown liver atrophy
57. The wall of the tuberculosis cavern
58. Leiomyosarcoma
59. Cavernous hemangioma
60. Lipoma
61. Syphilitic mesaortitis
62. Hemorrhagic infarction of the lung
63. Foreign body granuloma
64. Granulation tissue
65. Lung abscess
66. Skirr
67. Solid cancer
68. Stasis in the blood vessels of the brain
69. Gastric mucosal cancer
70. Viral hepatitis
71. Liver in myeloid leukemia
72. Kidney in diabetes