MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION

PENZA STATE UNIVERSITY

MEDICAL INSTITUTE

APPROVED
by director of the institute
_____ Mitroshin A.N.
"03" _____ 2016

STUDY PROGRAM OF THE DISCIPLINE

C 1.1.21 PATHOLOGY.CLINICAL PATHOLOGY

Program (specialty) – *31.05.01 – General Medicine*

Graduate's qualification (degree) – *medical doctor*

Study format – *full-time*

Penza, 2016

1. Goals of the discipline

The main goals of mastering the discipline Pathology. Clinical Pathology are: to study structural grounds of diseases, their etiology and pathogenesis in order to understand the theoretical basis of medicine, to examine the clinical picture and to use the knowledge in the medicine work.

2. Discipline's place in MPEP structure

The discipline Pathology. Clinical Pathology refers to the basic part (C1) of the curriculum.

Pathology is a basic discipline connected with other disciplines such as Histology, Embryology, Cytology; Microbiology, Virusology; Immunology; Pathophysiology.

The main concepts of pathology requires the study of such disciplines as Neurology, Otolaryngology; Ophthalmology; Forensic Medicine; Obstetrics and Gynecology; Pediatrics; Internal Diseases, Infectious Diseases; Phthisiology, General Surgery, Surgical Diseases; disciplines according to the specialty.

3. Student competences developed as a result of the discipline Pathology. Clinical Pathology

The process of studying the discipline is aimed at forming the components of the following competences in accordance with Federal State Educational Standards of Higher Education (hereinafter – FSES HE) in this field of study:

Competence code	Name of the competence	Structural elements of the competence (knowledge, skill, application as a final learner outcome)
1	2	3
GC- 1	Ability to abstract thinking, analysis, synthesis	*knowledge:* laws of formal logic; main points that should contain a report prepared for public speaking, how to submit the report correctly.
		skills: competently and logically build sentences in speech, argue their own arguments in the dispute and to refute arguments of the opponent
		ability: logical methods and techniques in the analysis of available information
GPC-5	Ability and willingness to analyze the results of their own activities to prevent professional errors	*knowledge:* macroscopic clinical and pathological signs of changes caused by therapeutic and surgical interventions.
		skills: correlate the possible benefits and harm caused to the patient as a result of therapeutic effects.
		ability: skills of recognizing iatrogenic complications and their elimination.
GPC-9	Ability to assess morphofunctional, physiological states and pathological processes in the human body to solve professional problems	*knowledge:* macroscopic and microscopic parameters of normal and pathological tissues and organs.
		skills: evaluate morphofunctional and pathological processes in the human body
		ability: methods of describing and diagnosing various pathological processes
PC-5	Willingness to collect and analyze patient	*knowledge:* method of examining the patient, normal characteristics of organs and tissues;

	complaints, his medical history, examination results, laboratory, instrumental, pathological and other studies in order to recognize the condition or establish the fact of the presence or absence of the disease	*skills:* determine methods of laboratory and functional diagnostics; identify pathological processes in human organs and systems in various diseases;
		ability: method of describing microslides
PC-6	The ability to determine in patients the main pathological conditions, symptoms, syndromes of dental diseases, nosological forms in accordance with the International Statistical Classification of Diseases and Problems Related to Health, X viewing	*knowledge:* macroscopic and microscopic parameters of normal and pathologically changed tissues and organs; principles of classification of diseases according to ICD
		skills: identify the underlying disease that caused the death, as well as the immediate cause of death; determine the place of the disease in the structure of the International Statistical Classification of Diseases and Problems Related to Health
		ability: skills in detecting macro- and microscopic signs of pathology that served as the direct cause of death; skills of determining the disease cipher by ICD
PC-20	Willingness to analyze and publicly present medical information based on evidence-based medicine	*knowledge:* bases and principles of proof of conclusions, justification of diagnoses, interpretation of data from various studies in medical practice.
		skills: prove medical information by justifying their findings, interpreting research results
		ability: proof of medical information by analyzing diagnoses, conclusions, and interpreting the results of various studies.

4. Structure and content of the discipline Pathology. Clinical Pathology

4.1. Structure of the discipline

The total workload of the discipline amounts to 8 credit units, 288 hours.

№	Names of parts and topics of the discipline	Semester	Weeks of the semester	Types of learner activities, including students' individual work and workload (in hours)									Forms of current assessment *(divided in weeks)*							
				In-class work				Students' individual work												
				Total	Lecture	Practical classes	Laboratory classes	Total	Preparation for class study	Abstract	Term paper (project)	Exam preparation	Discussion	Colloquium	Test assessment	Test paper grading	Research paper assessment	Practical sills	Term paper (project)	other .
1.	**Part 1. General course of pathology**	**5**		**57**	**19**	**38**		**51**	**51**											
1.1.	Pathology, its concept, goals and objectives, pathology methods. Cell pathology.	5	1	4	2	2		2	2				1					1		
1.2.	Parenchymatous degeneration.	5	2	2	-	2		2	2				2					2		
1.3	Mesenchymal degeneration	5	3	4	2	2		3	3				3					3		
1.4	Mixed degenerations	5	4	2	-	2		2	2				4					4		
1.5	Preparation for test lesson	5	5	2	-	2		3	3				5		5					
1.6	Test lesson with microslides diagnostics № 1	5	6	2	-	2		3	3				6					6		
1.7	Necrosis	5	7	4	2	2		2	2				7					7		
1.8	Disorders of blood and lymph circulation. Thrombosis. Embolism. Infarction.	5	8	4	2	2		3	3				8					8		

1.9	Exudative inflammation	5	9	4	2	2		3	3				9					9		
1.10	Productive inflammation	5	10	2		2		3	3				10					10		
1.11	Immune-pathological processes: hypersensitivity reactions, autoimmune processes, immunodeficiency states	5	11	4	2	2		2	2				11					11		
1.12	Adaptation and compensatory processes	5	12	4	2	2		2	2				12					12		
1.13	Preparation for test lesson	5	13	2		2		3	3				13		13					
1.14	Test lesson with microslides diagnostics № 2	5	14	2		2		3	3				14					14		
1.15	General features of tumors. Epithelial tumors without specific localization and organ-specific epithelial tumors	5	15	4	2	2		3	3				15					15		
1.16	Mesenchymal tumors, tumors of melanin-forming tissue and of nervous system	5	16	3	1	2		3	3				16					16		
1.17	Tumors of blood-forming tissue	5	17	2		2		3	3				17					17		
1.18	Preparation for test lesson	5	18	2		2		3	3				18		18					
1.19	Test lesson with microslides diagnostics № 3	5	19	2		2		3	3				19					19		
2.	**Part 2. Local course of pathology**	**6**		**72**	**18**	**54**		**36**	**36**											
2.1	Anemia, platelet disease, hemorrhagic diathesis	6	1	2		2		1	1				1					1		
2.2	Atherosclerosis.	6	2	4	2	2		2	2				2					2		
2.3	Hypertonic disease Ischemic heart disease. Cerebrovascular disease.	6	2	4	2	2		2	2				2					2		
2.4	Ischemic heart disease.	6	3	2		2		2	2				3					3		
2.5	Rheumatic diseases. Heart defects	6	4	2		2		2	2				4					4		
2.6	Acute pneumonia.	6	4	2		2		2	2				4					4		
2.7	Chronic nonspecific lung disease. Lung cancer	6	5	4	2	2		2	2				5					5		
2.8	Preparation for test lesson	6	6	2		2		1	1				6		6					

2.9	Test lesson with microslides diagnostics № 4	6	6	2		2		1	1				6					6		
2.10	Esophagitis, gastritis, gastric ulcer, stomach cancer	6	7	4	2	2		1	1				7					7		
2.11	Enteritis, colitis. Appendicitis. Intestinal tumors	6	8	2		2		1	1				8					8		
2.12	Hepatosis. Liver cirrhosis. Liver tumors	6	8	4	2	2		2	2				8					8		
2.13	Pancreatitis. Pancreatic necrosis. Tumors of the pancreas.	6	9	2		2		1	1				9					9		
2.14	Glomerulonephritis and pyelonephritis. Amyloidosis. Acute and chronic kidney failure.	6	10	4	2	2		2	2				10					10		
2.15	Diabetes mellitus. Goiter	6	10	4	2	2		1	1				10					10		
2.16	Preparation for test lesson	6	11	2		2		1	1				11		11					
2.17	Test lesson with microslides diagnostics № 5	6	12	2		2		1	1				12					12		
2.18	Diseases of male and female genital organs. Pathology of pregnanc	6	12	4	2	2		1	1				12					12		
2.19	Viral diseases.Influenza. Rabies. Rickettsioses	6	13	2		2		1	1				13					13		
2.20	Bacterial infections. Abdominal typhoid. Dysentery. Diphtheria. Scarlet fever.	6	14	4	2	2		1	1				14					14		
2.21	Sexually transmitted diseases. Syphilis	6	14	2		2		1	1				14					14		
2.22	Quarantine infections. Plague. Cholera. Anthrax.	6	15	2		2		1	1				15					15		
2.23	Tuberculosis	6	16	2		2		2	2				16					16		
2.24	Sepsis	6	16	2		2		1	1				16					16		
2.25	AIDS.	6	17	2		2		1	1				17					17		
2.26	Preparation for test lesson	6	18	2		2		1	1				18		18					
2.27	Test lesson with microslides diagnostics № 6	6	18	2		2		1	1				18					18		

3.	**Part 3. Clinical pathological anatomy.**	**7**		**57**	**19**	**38**		**15**	**15**											
3.1.	Concepts of nosology, disease, etiology, patho-and thanatogenesis. International Classification of Diseases.	7	1	4	2	2		1	1				1					1		
3.2	Diagnosis. Pathological diagnosis: principles of formulation, structure and content.	7	2	4	2	2		1	1				2					2		
3.3	Autopsy 1.	7	3	2		2							3					3		
3.4	Clinical and pathoanatomical analysis of the results of research of surgical and biopsy material.	7	4	4	2	2		1	1				4					4		
3.5	Autopsy 2.	7	5	2		2							5					5		
3.6	Clinical and pathological analysis of deaths from coronary heart disease and cerebrovascular diseases.	7	6	4	2	2		1	1				6					6		
3.7	Clinical and pathological analysis of deaths from diseases of the respiratory and digestive systems.	7	7	4	2	2		1	1				7					7		
3.8	Test lesson № 7	7	8	2		2		1	1				8					8		
3.9	Clinico-pathological manifestations of HIV infection.	7	9	4	2	2		1	1				9					9		
3.10	Autopsy 3.	7	10	2		2							10					10		
3.11	Clinico-pathological analysis of deaths from tuberculosis.	7	11	2		2		1	1				11					11		
3.12	Purulent septic diseases, nosocomial infection. Clinical and pathological analysis of deaths from sepsis.	7	12	4	2	2		1	1				12					12		
3.13	Test lesson № 8	7	13	2		2		1	1				13					13		
3.14	Autopsy 4	7	14	2		2							14					14		
3.15	Clinical and pathoanatomical aspects of terminal states.	7	15	4	2	2		1	1				15					15		

3.16	Clinical pathological anatomy of some complications of surgical specialties.	7	16	4	2	2		1	1				16					16		
3.17	Autopsy 5	7	17	2		2							17					17		
3.18	Clinical and morphological analysis of the diagnostic and treatment process. Iatrogenesis	7	18	3	1	2		1	1				18					18		
3.19	Test lesson № 9	7	19	2		2		2	2				19					19		
	Total workload, in hours			186	56	130		102	66				Interim assessment							
													Type					Semester		
													Test					5, 6		
													Diff. test					7		

4.2. Content of the discipline

INTRODUCTION

Pathology, its concept, goals and objectives, target of research, methods and levels of investigations. Brief historical outline. Pathological service and its significance in the Healthcare system.

GENERAL PATHOLOGY

Injuries (alterations)

Essence, reasons, mechanisms and types of alterations.

Cell pathology

Cell nucleus pathology: the changes of structure, size, form and number of nuclei, the structure and the size of nucleoli, nuclear envelope, nuclear inclusions. Mitosis pathology. Cytoplasm pathology: the changes of membrane, endoplasmic reticulum, canalicular apparatus, secretory granule, mitochondria, lysosome, microbodies. "Diseases" of mitochondria, lysosome, peroxisome. Cytoskeleton and pathology of a cell. Changes of plasmolemma. Pathology of cellular joinings.

Degeneration (dystrophy)

Definitions. Degeneration as a disorder of (cell) metabolism and the forms of injury (alteration).Degeneration as the first reactive process of ontogenesis.

Cellular and extracellular mechanisms of trophicity. Degeneration development reasons. Morphogenetic mechanisms, structural levels of its presentation and outcome. Degeneration classification: depending on the domination of morphological changes of special elements of parenchyma or stroma (parenchymatous, stromal-vascular or mixed), depending on the domination of metabolism disorders (protein, fat, carbohydrate, mineral), depending on genetic factors influence (inherited and acquired) and the process rate (general and local).

Inherited enzymopathy (storage disease) as an expression of inherited degeneration, meaning in childhood pathology.

Parenchymatous degeneration, their division into albuminous (proteinosis), lipophanerosis (lipidosis), carbohydrate ones.

Parenchymatous albuminous degeneration: hyaline-drop, hydropic, keratinization. Morphological characteristics, reasons, pathogenesis.

Inherited degeneration, connected with metabolic imbalance of amino acids: cystinosis, tyrosinosis, phenylpyruvic oligophrenia (phenyl ketonuria).

Parenchymatous adipose degeneration. Thrush breast, hepatic steatosis, adipose degeneration of kidneys. Morphological characteristics, reasons, pathogenesis.

Inherited (systematic) lipidosis: cerebrosidelipidosis (Gaucher disease), sphingomyelinosis (Niemann disease), gangliosidosis (Tay-Sachs disease, or amaurotic familial idiocy), sulfatides.

Parenchymatous carbohydrate degeneration. Degenerations connected with metabolic imbalance of glycogen. Morphology, reasons, pathogenesis of metabolic imbalance of glycogen under pancreatic diabetes.

Glycogenosis, its types: Gierke disease, Pompe disease, Brian McArdle disease, Hers disease, Forbes disease, Anderson's Disease. Degenerations connected with metabolic imbalance of glucoprotein.

Mucoid (colloid) degeneration. Morphological characteristics, pathogenesis.

Mucoviscidosis

Stromal-vascular degeneration, their subdivision into albuminous (proteinosis), lipophanerosis (lipidosis),carbohydrate ones

Stromal-vascular adipose degeneration: myxomatosis, fibrinoid degeneration (fibrinoid), hyalinosis, amyloidosis. Morphological characteristics, causes, pathogenesis. Classification of amyloidosis, classification of its forms.

Stromal-vascular adipose degeneration, connected with the metabolic imbalance of neutral fat or cholesterol and its esters. Fatty degeneration (adiposis).Reasons, pathogenesis, morphological characteristics, classification. Cachexia. Reasons, pathogenesis, morphological manifestation. Local fatty degeneration (lipomatosis) and regional lipodystrophy. Atherosclerosis as an example of diseases with metabolic imbalance of cholesterol and its esters.

Family hypercholesterole micxanthelasmatosis.

Stromal-vascular carbohydrate degeneration, connected with the metabolic imbalance of glycoproteins and mucopolysaccharide – tissue mucilagination. Morphological characteristics, causes, pathogenesis.

Mucopolysaccharidosis.

Mixed dystrophies with metabolic disorders of complex proteins, chromoproteins, nucleoproteins and minerals.

Metabolic imbalance of chromoproteid. Endogenous pigments: hematogenous pigment, proteinogenous (tyrosinotryptophanic) pigment, lipopigment. Causes of chromoproteid metabolic imbalance. Endogenous pigments, their types, development mechanism, morphological characterization. Metabolic imbalance of hematogenous pigments. Hemosiderosis, hemochromatosis, iron storage disease, jaundice (cythemolytic icterus, hepatocellular jaundice, obstructive jaundice), porphyria. Metabolic imbalance of proteinogenous pigments. Melanism (widespread and local, acquired and congenital).Addison's disease. Pigment reduction: widespread and local, acquired and congenital. Albinism. Argentaffin cells beads pigment. Metabolic imbalance of lipopigments. Lipofuscinosis

Metabolic imbalance of nucleoproteid. Gout, urinary stone disease, uric acid infarct.

Metabolic imbalance of minerals. Mineral degradation, its types. Metabolic imbalance of calcium – calcinosis (calcareous degeneration, calcinosis)

Types of calcinosis (metastatic calcification, dystrophic calcification, metabolic calcification), morphological characteristics, causes, pathogenesis. Metabolic imbalance of phosphorus. Rickets, renal fibrocystic osteosis, renal dwarfism. Hypervitaminosis D. Metabolic imbalance of cuprum. Hepato-cerebral dystrophy (Wilson disease).

Metabolic imbalance of potassium and sodium.

Formation of calculi. Causes and mechanisms of calculi formation. Types of calculi. Consequences of calculi formation.

Necrosis

Definition of necrosis as local death. The definition of paranecrosis, necrobiosis, autolysis, apoptosis. Causes, development mechanism and morphological characterization of necrosis. Peculiarities of children's necrosis.

Classification of necrosis depending on reasons which led to necrosis (traumatic, toxic, trophoneurotic, allergic, vascular), and mechanisms of pathogen factor (direct and indirect necrosis).

Clinico-pathologic forms of necrosis, their characterization. Essence of necrosis and its outcomes.

Death, death signs, after death changes

Causes of death. Natural death, violent death, death from diseases. Clinical and biological death. Dying of mechanisms and death signs. After death changes, their morphological characterization. Peculiarities of after death changes under intrauterine fetal death and of children. Thanatopsy ethics. Definition of thanatogenesis and reanimation.

Disturbed Blood And Lymph Circulation

Disturbed Blood Circulation

The definition of general and local circulatory disturbance, their interrelation, classification. Peculiarities of children's circulatory disturbance.

Plethora. Arterial plethora. Causes, types, morphology. General and local congestion, acute and chronicle. Internals changes during acute congestion (fetal asphyxia and neonatal asphyxia, acute cardiac failure), its outcomes. Internals changes during chronicle venostasis (chronicle cardiovascular collapse). Morphogenesis of stagnant sclerosis. Anemia. Causes, types, morphology, outcomes.

External and internal hemorrhage, bleedings. Causes, types, morphology, outcomes, essence. Bleeding diathesis

Plasmorrhagia. Causes, development mechanisms, morphological characterization.

Stasis. Causes, development mechanisms, types, morphological characterization, stasis consequences. Prestasis. Erythrocyte adhesion phenomenon.

Thrombosis. Causes, mechanisms of thrombus formation. Local and general factors of thrombosis. Thrombus, its types, morphological characterization, outcomes. Disseminated intravascular coagulation. Essence of thrombosis.

Embolism. Causes, development mechanisms, morphological characterization, outcomes and essence of embolism. Orthograde, retrograde and paradoxical embolism. Thromboembolia of the pulmonary artery. Collapse. Causes, development mechanisms, morphological characterization.

Disorders of lymph circulation

Lymphopoiesis deficiency. Causes, types, morphological characterization. Essence of lymph circulation disorders for the organism.

Acute and chronicle lymphoedema. Consequences of chronicle stagnation of lymph, elephantiasis. Lymphostasis, lymphangiectasia. Internal and external lymphorrhea (ascites, chylothorax). Tissue fluid content disorders.

Oedema. Causes, development mechanisms, types, morphological characterization, outcomes. Edema. Fetus and neonate edema.

Exsicosis.

Inflammation

Definition. Essentials and biological essence of inflammation. The problem of local and general inflammation for its understanding. Age peculiarities of inflammation. Peculiarities of inflammation during embryogenesis, phenogenesis, neonatality.

Etiology and pathogenesis of inflammation. Inflammatory mediators. Inflammatory reaction kinetics. Humoral and nervous factors of inflammation regulation. Inflammation and immunity. Allergic and immune inflammation.

Morphological inflammation: alteration, exudation, proliferation.

Inflammation classification. Exudative and productive, fibrinous (croupous, diphtheritic), suppurative (phlegmon, apostasis), putrid, hemorrhagic, catarrhal, mixed. Productive inflammation, its types: interstitial, granulomatous, inflammation with polyp formation. Causes, development mechanisms, morphological characterization, outcomes.

Granulomatosis. Granulomatosis kinetics.

Immune-pathological processes

Morphology of immune-genesis disorders. Thymus changes during immune-genesis disorders. Age and accidental involution (transformation), hypoplasia and hyperplasia of thymus. Thymomegalia as an expression of congenital immunodeficiency. Changes of peripheral lymphoid tissue during immune-genesis disorders. Morphological immune-morphological characterization.

Hypersensitivity reaction of immediate and delayed-type reactions, graft immunity reaction. Morphogenesis, morphological immune-histochemical characterization, connection with inflammation, clinical picture meaning.

Autoimmunization and autoimmune diseases

Autoimmune diseases. Etiology, development mechanisms, morphological characterization. Classification: autoimmune diseases and diseases with autoimmune disorders.

Immunodeficiency syndromes (primary and secondary). Clinico-pathologic characterization. HIV infection.

Adaptation and compensation.

Essentials, biological and medical essence of adaptation and compensation.

Phase character of compensatory-adaptive process. Emergency phase, compensation phase and exhaustion phase, their morpho-functional characteristics.

Regeneration.

Definition. Essentials and biological essence of regeneration. Levels of reconstruction (compensation) of structural elements. Regulation mechanisms. Cellular and intracellular regeneration. Common and local conditions, determining the character of regeneration process. Age peculiarities.

Morphogenesis of regeneration process, proliferative and differentiate phases, their characterization. Definition of cambial elements, precursor cell, stem cells.

Types of regeneration: physiological, reparative, pathological. Their morphological characterization. Complete and incomplete regeneration. Restoratory hypertrophy

Regeneration of some tissues and internals. Regeneration of blood, vessels, connective, fatty, cartilaginous, bone, muscular tissue and epithelium. Regeneration of liver, pancreas gland, kidneys, endocrine gland, lungs, myocardium, cerebrum and spinal cord, peripheral nerves.

Wound repair.

Process of adaptation and compensation. Adaptation. Definition, essentials.

Types of adaptation: granular degeneration, atrophy, hypertrophy (hyperplasia), organization, remodeling of tissues, metaplasia, dysplasia.

Compensation. Definition, essentials.

Types of compensation. Work and vicarious hypertrophy.

Sclerosis and cirrhosis. Definition, causes, development mechanism, morphological characterization. Connection of sclerosis and cirrhosis with chronicle inflammations.

Tumors

Essentials of tumor growth, tumor expansion.

Tumor etiology. Modern theories of tumor expansion.

Morphogenesis and histogenesis of tumors. Precancerous lesion and changes, its essentials, morphology. Dysplasia and cancer. Essentials of neoplastic proliferation (Faulds). Immune response to tumor. Importance of biopsy for oncology.

Tumor structure, peculiarities of tumor cell.

Tumor growth (expansive, infiltrate and appositive; exophytic and endophytic).

Benign and malignant tumors and tumors with local destructive growth. Malignance criteria. Metastatic diseases, their types and regularities. Idea of relapse. Secondary tumor changes.

Modern tumor classification. Its principles.

Epithelioma (benign and malignant). Cancer, its types.

Mesenchymal tumors (benign and malignant). Sarcoma, its types. Special types of mesenchymal tumors.

Tumors of melanin-forming tissue (benign and malignant). Nevus, melanoma.

Tumors of nervous system and meninges: neuroectodermal, meningovascular, vegetal and of peripheral nervous system (benign and malignant). Hematologic malignancy (ref. to "Hematologic malignancy").

Teratomas. Their types: histoid, organoid, organismoid.

LOCAL PATHOLOGY

Blood system diseases

Anemia. Causes, pathogenesis, types, classification. Anemia as a result of blood loss (posthemorrhagic), disorders of blood circulation and increased blood destroying (hemolytic). Morphological characterization.

Thrombocytopenia and trombocytopathya; hemorrhagic diathesis. Causes, development mechanisms, morphological presentation. Classification.

Hematologic malignancy (hemoblastosis). Classification. Age peculiarities.

Leucosis. System tumors of blood-forming tissue. Causes, pathogenesis, forms, morphological characterization. Acute leukaemia, its types. Chronicle leucosis of myelocytic, lymphocytic and monocytic origin. Paraprotein emiclymphatic leucosis (myelomatosis, Waldenström primary macroglobulinemia, Franklin disease)

Lymphoma – local tumors of hematopoietic system. Causes, pathogenesis, forms, morphological characterization. Lymphogranuloma (Hodgkin disease).Non Hodgkin lymphoma.

Heart-vascular system diseases

Endocarditis. Bacterial endocarditis (ref. to Sepsis). Fibroplasticmural endocarditis with eosonophilia. Causes, development mechanisms, morphology, outcomes.

Myocarditis. Acute isolated myocarditis. Causes, development mechanisms, morphology, outcomes.

Cardiac anomalies (inherited and acquired). Causes of inherited cardiac anomalies, pathogenesis, morphological characterization.

Cardiosclerosis. Causes, development mechanisms, types, morphology.

Atherosclerosis. Etiology and pathogenesis. Pathology. Atherosclerosis stages. Clinico-pathologic forms and their characterization, cause of death. Atherosclerosis and myocardial infarction, their relations.

Hypertensive disease and asymptomatic hypertonia. Etiology and pathogenesis of hypertonia. Anatomico-pathological changes during benign and malignant progress of a disease. Clinico-pathologic forms of hypertonia, their characterization, cause of death. The relations of hypertonia, atherosclerosis and myocardial infarction.

Ischemic heart disease (coronary heart disease).Definition, relations with atherosclerosis and hypertonia. Etiology and pathogenesis, risk factors.

Myocardial infarction. Morphology of acute, recurrent myocardial infarction. Complications, causes of death.

Chronicle ischemic heart disease. Morphological characterization, complications, causes of death.

Cerebrovascular disease. Definition, connections with atherosclerosis and hypertonia. Etiology and pathogenesis. Morphological characterization.

Cardiomyopathy (primary and secondary).Causes, pathogenesis.

Vasculitides. Causes, development mechanisms, morphology, outcomes. Occlusive thromboaortopathy (Takayasu's arteritis), periarteritisnodosa, Wegener's granulomatosis, Winiwarter-Buerger disease. Primary and secondary vasculitides.

Rheumatic diseases

Rheumatic disease essentials. Morphology of immune disorders and processes of system disorganization of connective tissue, characterizing rheumatic diseases; children's peculiarities.

Rheumatism. Etiology, pathogenesis, pathology. Immune-morphological characterization, dynamic pattern: mucoidand fibrinoid degeneration, granulomatosis, sclerosis. Clinic-anatomical forms. Heart changes (endocarditis, myocarditis, pericarditis, pancreatitis) and vessels.

Rheumatic heart diseases. The changes of lungs, neurotic system, kidneys and other internals. Complications, causes of death. Peculiarities of children's rheumatism.

Rheumatic arthritis. Etiology, pathogenesis, pathology. Immune-morphological characterization. The changes of vessels, kidneys, heart. Complications, causes of death.

Bekhterev's disease.

Systemic lupus erythematosus. Etiology, pathogenesis, pathology. Immune-morphological characterization. The changes of vessels, kidneys, heart. Complications, causes of death.

Systemic scleroderma (progressive systemic sclerosis). Etiology, pathogenesis, pathology. Visceral manifestations. Complications, causes of death.

Nodular periarteritis (ref. to. Vasculitides).

Dermatomyositis. Etiology, pathogenesis, pathology. Complications, causes of death.

Diseases of the respiratory system

Acute inflammatory disease of bronchi. *Acute bronchitis*. Causes and development mechanisms. Classification. Morphological characterization.

Acute inflammatory disease of lungs (acute pneumonia).Classification, its principles.

Lobar pneumonia. Etiology, pathogenesis, pathology. Atypical forms. Complications.

Bronchopneumonia. Etiology, pathogenesis, pathology. Peculiarities of bronchopneumonia depending on infecting agent (viral, pneumococcal, staphylococcal, streptococcal, pneumocystic, mycotic), chemical and physical factor (uraemic, lipidic, dustborne, radiac), age (children and elderly people's pneumonia).Complications.

Interstitial pneumonia. Etiology, pathogenesis, morphological characterization, outcomes.

Acute destructive diseases of lungs.

Apostasis, gangrene. Pathogenesis, morphology.

Chronic nonspecific lung disease. Definition. Classification. Obstructive and nonobstructive chronic diseases of lungs. Chronic bronchitis, bronchiectasia, pulmonary emphysema, bronchial asthma, chronic abscess, interstitial lung disease, pulmonary fibrosis. Etiology, pathogenesis. Pathology of nosological entities. Chronic corpulmonale. Causes of death.

Carcinoma of lung. Growth, etiology, pathogenesis. Pre-cancerous condition. Clinico-pathological characterization. Morphology of juxtahilarand peripheral carcinoma of lung, growth

character, complications. Radioanatomy and histology forms. Regularities of metastatic spreading. Pleuritis. Causes, development mechanisms, morphology, outcomes.

Diseases of the digestive system

Oral pharynx and throat diseases. *Quinsy*. Causes, development mechanisms. Primary and secondary, acute and chronic quinsy. Pathology, complications.

Esophagus diseases. *Esophagus diverticulum* (inherited and acquired). Characterization. *Esophagitis*. Causes, types, morphological characterization, complications.

Esophageal cancer. Etiology, pathogenesis. Classification. Morphological characterization. Complications.

Gaster diseases.

Acute gastritis. Causes, development mechanisms, morphological forms, their characterization. Complications.

Chronicgastritis, essentials. Causes, development mechanisms. Morphological forms, distinguished on the basis of gastrobiopsy. Their characterization. Chronic gastritis as pre-cancerous condition of stomach.

Gastric ulcer, gastroduodenal ulcer. Growth, etiology. Pathogenesis, its peculiarities during pyloroduodenal and mediodorsal stomach ulcer. Children's peculiarities of ulcers. Pathology during recrudescence and remission. Complications, outcomes .Chronic ulcer as pre-cancerous condition.

Stomach cancer. Growth, etiology, pathogenesis. Pre-cancerous conditions and changes. Clinicopathological characterization. Morphology of stomach cancer with primary endophytic and exophytic character of growth. Histological forms. Complications. Regularities of metastatic spreading.

Bowel disorders. *Enteritis* (acute and chronic). Acute enteritis. Etiology, pathogenesis, morphology, complications. Chronic enteritis. Essentials. Etiology, pathogenesis, morphology of forms on the basis of enterobiopsy. *Enteropathy,* its essentials, types, morphological characterization. Whipple's disease

Colitis (acute and chronic). Etiology, pathogenesis, morphology, complications. Characterization of chronic colitis forms on the basis of rectobiopsy. *Nonspecific ulcerative colitis*. Causes, development mechanisms, pathology, complications. *Crohn's disease*. Causes, development mechanisms, pathology, complications. *Appendicitis*. Spread of disease, etiology, pathogenesis. Classification. Pathology of acute and chronic appendicitis. Complications. Peculiarities of young children.

Bowel tumors. Colon cancer. Spread of disease, etiology, pathogenesis. Forms, morphological characterization, regularities of metastatic spreading, complications.

Peritonitis.

Hepatopathy. *Hepatosis* (inherited and acquired, acute and chronic). *Massive hepatic necrosis* as a variant of acute hepatosis. Etiology, pathogenesis, pathology, complications, outcomes. Massive hepatic necrosis and hepatic cirrhosis, their relations.

Fatty hepatosis (hepatic steatosis). Etiology, pathogenesis. Role of alcohol in the hepatic steatosis development. Pathology, complications, outcomes.

Hepatitis (acute and chronic, primary and secondary). Inherent hepatitis. Essence of puncture biopsy of liver in the creation of modern hepatitis classification. Morphological characterization.

Viral hepatitis. Classification of viral hepatitis. Etiology, epidemiology and pathogenesis. Clinico-pathological forms, their morphological characterization. Complications, outcomes. Viral hepatitis and hepatic cirrhosis.

Alcoholic hepatitis. Acute and chronic. Development mechanisms, morphological characterization, complications, outcomes. Alcoholic hepatitis and hepatic cirrhosis.

Drug-induced hepatitis. Development mechanisms. Morphological characterization

Hepatic cirrhosis. Etiology, pathogenesis and morphogenesis. Classification. Types of hepatic cirrhosis, their morphological characterization. Complications. Banti's syndrome. Portal hypertension syndrome. Causes of death.

Liver cancer. Causes, essence of liver cancer as pre-cancerous condition. Forms of cancer (macro and micro). Complications. Regularities of metastatic spreading.

Gallbladder diseases. *Cholecystitis, cholelithiasis, gall bladder cancer*.

Pancreas gland diseases. *Pancreatitis(acute and chronic)*. Causes, development mechanisms, pathology, complications.

Pancreatic cancer. Causes, development mechanisms. Frequency of localization in different glands parts, morphological characterization.

Kidneys diseases. Modern clinic-pathologic classification of kidneys diseases. The role of kidneys biopsy for their study.

Glomerulonephritis. Modern classification. Etiology, pathogenesis. Immune-morphological characterization of different forms of glomerulonephritis. Pathology. Complications, outcomes. Hereditary nephritis

Nephrotic syndrome (primary and secondary).Forms of primary nephrotic syndrome: lipoid nephrosis, membranous nephropathy (membranous glomerulonephritis), focal, segmental, glomerularhyalinosis. Causes, pathogenesis, morphological characterization, complications, outcomes.

Lardaceous kidney. Causes, pathogenesis, morphological characterization of the stages, complications, outcomes.

Acute kidney failure–necroticnephrosis. Causes, pathogenesis, morphological characterization, complications, outcomes.

Chronic tubulopathy obstructive genesis. Paraprotein emicnephrosis, gouty kidney. Pathogenesis, morphology, complications, outcomes.

Inherited tubulopathy (inherited canalicular enzymopathy). Clinicopathologic characterization.

Interstitial, tubulo-interstitial nephritis. Etiology, pathogenesis, pathology, complications, outcomes.

Pyelonephritis (acute and chronic). Etiology, pathogenesis, pathology, complications, outcomes. Children's peculiarities.

Nephrolithiasis. Etiology, pathogenesis, pathology, complications, outcomes. Connections with pyelonephritis. Children's peculiarities.

Polycystic kidney disease. Morphological characterization.

Nephrosclerosis. Causes, pathogenesis and morphogenesis. Types, morphology.

Chronic kidney disease. Pathogenesis. Morphological characterization. Pathomorphism as a result of chronic hemodialysis usage.

Nephroncus. Renal adenocarcinoma. Causes. Morphological characterization. Renal pelvis cancer

Genitals and mammary glands diseases

Prostatic hypertrophy (dishormonal hypertrophic prostatopathy). Forms. Morphological characterization. Complications.

Glandular hyperplasia of endometrial mucosa. Morphological characterization. Complications.

Endocervicosis. Morphological characterization. Complications.

Fibrocystic breast condition. Classification. Non-proliferative and proliferative forms. Morphological characterization. Complications.

Gynecomastia. Morphological characterization. Complications.

Inflammatory diseases. Endometritis (acute and chronic). Causes, pathology, morphology, complications.

Mastitis (acute and chronic). Causes, pathology, morphology, complications.

Genital tumors and mammary tumors. Uterine cancer. Frequency. Causes. Pre-cancerous condition. Classification of uterine cancer. Morphological characterization, peculiarities of cervical cancer and endometrial cancer. Histological forms. Laws of metastatic spreading. Complications.

Ovarian cancer. Frequency. Causes. Classification. Morphological characterization. Complications.

Breast cancer. Frequency. Causes. Pre-cancerous condition. Classification. Morphological characterization. Histological forms. Laws of metastatic spreading. Complications.

Prostate cancer. Frequency. Causes. Morphological characterization. Complications.

Testicular tumor. Classification. Morphological characterization. Complications.

Adnexa tumors, spermatic cord tumors and testis tumors. Morphology. Pregnancy and postpartum period diseases.

Gestational toxicosis. Etiology, pathogenesis. Pathology, causes of death. Abdominal pregnancy. Causes. Types. Morphological characterization. Complications.

Spontaneous abortion, premature birth. Causes. Morphological characterization.

Trophoblastic diseases. Molar pregnancy. Morphological characterization. Complications. *Chorion carcinoma.* Histogenesis. Morphological characterization. Peculiarities of metastatic spreading.

Placental polyp.

Birth alvus infection. Causes. Pathogenesis, morphology, complications.

Endocrine diseases

Hypophysis. Acromegaly. Etiology, pathogenesis, morphology. Hypophyseal dwarfism. Etiology, pathogenesis, morphology. Cushing's basophilism. Etiology, pathogenesis, morphology. Causes of death. Adiposo-genital dystrophy. Etiology, pathogenesis, morphology. Diabetes insipidus. Etiology, pathogenesis, morphology. Pituitary malignant tumor and chromophobic adenoma. Cerebro hypophyseal cachexia. Etiology, pathogenesis, morphology. Addison's disease. Etiology, pathogenesis, morphology. Causes of death.

Adrenal tumors. Types. Morphology. Complications.

Thyroid. Goiter (struma). Classification. Diffuse and nodular, colloid and parenchymatous. Endemic, sporadic, Graves' disease, autoimmune thyroiditis (lymphomatous struma), Riedel's struma. Causes, development mechanisms. Pathology, complications, causes of death

Hypothyreoidism and athyreosis. Morphological characterization.

Thyrophyma. Morphology. Complications.

Parathyroid glands. Hyperparathyroidism. Causes, development mechanisms, pathology. Osteitis fibrosa cystic (ref. to “Musculoskeletal disorders”). Hypoparathyrosis. Morphological characterization.

Pancreas gland. Pancreatic diabetes. Etiology, pathogenesis, pathology. Macro- and micro angiopathy as diabetes presentation. Types of diabetes microangiopathy, morphology; intercapillary glomerulosclerosis. Complications. Causes of death.

Vitamin deficiency. Rickets. Etiology, pathogenesis. Early and late forms, pathology, complpications. Scurvy. Etiology, pathogenesis, pathology, complications.

Musculoskeletal disorders

Osteitis fibrosa cystica. Etiology, pathogenesis, morphological characterization, complications.

Osteomyelitis. Etiology, pathogenesis, morphological characterization, complications.

Primary hematogenous osteomyelitis. Fibrous dysplasia. Etiology, pathogenesis, morphological characterization, complications.

Osteopetrosis. Etiology, pathogenesis, morphological characterization, complications.

Paget disease. Etiology, pathogenesis, morphological characterization, complications.

Arthronosos. O*steoarthrosis.* Etiology, pathogenesis, morphological characterization, complications.

Rheumatic arthritis (ref. to "Rheumatic diseases").

Skeletal muscles diseases. *Progressive muscular dystrophy*. Classification. Etiology, pathogenesis, morphological characterization, complications.

Myasthenia. Etiology, pathogenesis, the role of immunologic mechanisms. Morphology, complications

Central nervous system diseases

Alzheimer's disease. Etiology, pathogenesis. Morphological changes of cerebrum, complications.

Amyotrophic lateral sclerosis. Etiology, pathogenesis, morphological characterization, complications.

Multiple sclerosis. Etiology, pathogenesis, morphological characterization, complications.

Encephalitides. Classification. Etiology, pathogenesis, morphological characterization, complications.

Tick-borne encephalitis.

Infectious diseases

Biological and social factors for the development of infectious diseases. Reactivity of the organism, age and infection. General morphology of infection process, local and general changes. Immune-morphology of an infection. Classification of infectious diseases.

Infectious agent, infection atrium, infection pathogenesis. Cyclic and acyclic infections. Complications, causes of death. Pathomorphism of infectious diseases.

Viral disease. Peculiarities of an infection. General morphological characterization.

Acute respiratory viral infection: influenza, parainfluenza, respiratory syncitial virus, adenovirus infection. Etiology, epidemiology, pathogenesis, pathology, complications, causes of death.

Smallpox as quarantinable disease. *Lyssa*. Etiology, pathogenesis, morphological characterization, complications, causes of death.

Rickettsial diseases. Infection peculiarities, general morphological characterization. Classification. *Epidemic typhus.* Etiology, epidemiology, pathogenesis, pathology, complications, causes of death. *Recrudescent typhus fever*. Morphological characterization.

Bacterial diseases. General morphological characterization. Infection diversity depending on the infectious agent peculiarities and the ways of its transmission.

Bacterial intestinal infections: typhoid fever, salmonelloses, dysentery, yersiniosis, cholera. Etiology, epidemiology, pathogenesis, pathology, complications, causes of death. *Cholera as quarantinable disease*.

Airborne bacterial infection: meningococcal disease, diphtheria, scarlatina. Etiology, epidemiology, pathogenesis, pathology, complications, causes of death.

Anthropozoonotic disease: plague, tularemia, brucellosis, Siberian plague. Etiology, epidemiology, pathogenesis, pathology, complications, causes of death. Plague as quarantinable disease.

Syphilis. Etiology, pathogenesis. Primary, secondary, ternary periods. Congenital syphilis (early, late). Visceral syphilis. Pathology, complications, causes of death. Pathomorphism of syphilis.

Bilious typhoid. Etiology, pathogenesis, morphology, complications.

Fungus diseases (*mycosis*). *Dermatomycosis. Visceral mycosis*. Classification. Types. Morphological characterization.

Diseases caused by **protozoan and helminthes**. Peculiarities of pathogenic organisms, general morphological characterization. Malaria, amebiasis, balantidiasis, echinococcosis, schistosomiasis. Etiology, epidemiology, pathogenesis, pathology, complications, causes of death.

CLINICAL PATHOLOGY

Organization of work and documentation of the pathoanatomical department. Procedure for opening the corpses of the dead in hospitals and at home. Medical death certificate: essence and rules of filling. C*oncept of the disease*. Organopathological, syndromological and nosological principles of studying diseases. Etiology, pathogenesis and thanatogenesis. International Statistical Classification of Diseases and Related Health Problems (ICD-X).

Pathoanatomical diagnosis, the principles of its construction. Structure of the diagnosis: primary disease, complication, concomitant disease, surgery. Main and immediate causes of death. Combined primary disease: competing and combined diseases, primary and background diseases. Pathologic examination of surgical and biopsy material: objects, methods, diagnostic features, clinical and pathologic analysis of the results. Clinical and morphological aspects of coronary heart disease: acute, recurrent and recurrent myocardial infarction, acute coronary insufficiency, post-infarction and atherosclerotic cardiosclerosis, acute and chronic heart failure; complications and immediate cause of death, coding. Clinical and morphological aspects of cerebrovascular diseases: cerebral infarction, supra and intrathecal hemorrhages, intracerebral hemorrhages, aneurysms and cerebral vascular malformations; complications and immediate cause of death; coding. Clinical and morphological aspects of diseases of the respiratory system: chronic bronchitis, chronic obstructive pulmonary disease, asthma, bronchiectasis, respiratory failure; complications and immediate cause of death, coding. Clinical and morphological aspects of diseases of the digestive system: esophagitis, ulcers and perforation of the esophagus, gastro-esophageal rupture-hemorrhagic syndrome, stomach ulcers, gastritis, appendicitis, Crohn's disease, ulcerative colitis, acute vascular disease of the intestines, intestinal obstruction, alcoholic hepatosis, toxicosis, gastrointestinal ulcer, gastrointestinal ulcer, liver abscess, cholecystitis and pancreatitis; complications and immediate cause of death, coding

Tuberculosis. Etiology, pathogenesis. Classification. Primary, hematogenous, secondary tuberculosis. Pathological anatomy and clinical and morphological aspects of tuberculosis; complications, pathomorphosis, causes of death, coding.

HIV infection. Epidemiology. Etiology, pathogenesis, stages. Morphological manifestations, complications, causes of death, coding. Purulent inflammatory processes occurring in the treatment of patients in the cranial cavity, pleural cavities, pericardium, abdominal cavity, bones and soft tissues: course and morphological manifestations.
Sepsis as a special form of infection. Differences from other infections. Etiology, pathogenesis, relationship of macro - and microorganism. Classification of sepsis. Clinical and anatomical forms of sepsis: septicemia, septicopyemia, septic (bacterial) endocarditis, chroniosepsis. Umbilical sepsis in children. Morphological manifestations of sepsis, complications, causes of death, coding.
Terminal states: characteristics, types (cardiac left ventricular, cardiac right ventricular, pulmonary, cerebral), pathological changes in the main life-support systems. Pathological changes during complications in neurosurgery, cardiovascular, pulmonary and abdominal surgery and in obstetric-gynecological and urological practice. Pathomorphosis of diseases. Clinical and pathological analysis of the therapeutic and diagnostic process. Pathoanatomical epicrisis. Role of the commission for the study of lethal outcomes, the treatment and control commission and the clinical and anatomical conference in clinical and anatomical analysis. Objective and subjective causes and categories of discrepancy between clinical and pathologoanatomical diagnoses. Evaluation of adverse outcomes of the diagnostic and treatment process.

5. Educational technologies

- Traditional classes based on the work with gross specimen and visual material.
- Studying of microslides with the help of optical microscope and noticing the main marks of pathological changes in the copybook.
- Multimedia lectures.
- Case studies.
- Analysis of pathology.
- Participating in autopsy and clinic and pathomorphological analysis of dissecting examination results.
- Individual work with books, handbook of anatomical charts, microslides and gross specimen.

In order to implement an individual approach to teaching students undergoing special learning process within the framework of an individual work plan, the study of this discipline is based on the following opportunities: providing students' individual work, including work in the electronic educational environment using appropriate software equipment, forms of distance learning, Internet resources, individual consultations, etc.

6. Educational and methodological support of students' out-of-class work. Assessment means for current progress monitoring, interim attestation of discipline mastering results.

6.1. Outline of students' individual work

Week number.	Topic	Type of students' individual work	Task	Recommended literature	Number of hours
1	Pathology, its concept, goals and objectives, pathology methods. Cell pathology.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
2	Parenchymatous degeneration.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
3	Mesenchymal degeneration	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
4	Mixed degenerations	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2

5	Preparation for test lesson №1	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
6	Test lesson with microslides diagnostics № 1	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
7	Necrosis	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
8	Disorders of blood and lymph circulation. Thrombosis. Embolism. Infarction.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
9	Exudative inflammation	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3

10	Productive inflammation	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
11	Immune-pathological processes: hypersensitivity reactions, autoimmune processes, immunodeficiency states	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
12	Adaptation and compensatory processes	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
13	Preparation for test lesson № 2	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
14	Test lesson with microslides diagnostics № 2	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3

15	General features of tumors. Epithelial tumors without specific localization and organ-specific epithelial tumors	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
16	Mesenchymal tumors, tumors of melanin-forming tissue and of nervous system	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
17	Tumors of blood-forming tissue	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
18	Preparation for test lesson №3	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3
19	Test lesson with microslides diagnostics № 3	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	3

1	Anemia, platelet disease, hemorrhagic diathesis	Preparation for test lesson	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
2	Atherosclerosis.	Preparation for test lesson	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
2	Hypertonic disease Ischemic heart disease. Cerebrovascular disease.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
3	Ischemic heart disease.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
4	Rheumatic diseases. Heart defects	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2

4	Acute pneumonia.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
5	Chronic nonspecific lung disease. Lung cancer	Preparation for test lesson	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
6	Preparation for test lesson №4	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
6	Test lesson with microslides diagnostics № 4	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
7	Esophagitis, gastritis, gastric ulcer, stomach cancer	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1

8	Enteritis, colitis. Appendicitis. Intestinal tumors	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
8	Hepatosis. Liver cirrhosis. Liver tumors	Preparation for test lesson	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
9	Pancreatitis. Pancreatic necrosis. Tumors of the pancreas.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
10	Glomerulonephritis and pyelonephritis. Amyloidosis. Acute and chronic kidney failure.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
10	Diabetes mellitus. Goiter	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1

11	Preparation for test lesson №5	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
12	Test lesson with microslides diagnostics № 5	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
12	Diseases of male and female genital organs. Pregnancy pathology.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
13	Viral diseases. Influenza. Rabies. Rickettsioses	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
14	Bacterial infections. Abdominal typhoid. Dysentery. Diphtheria. Scarlet fever.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1

14	Sexually transmitted diseases. Syphilis	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
15	Quarantine infections. Plague. Cholera. Anthrax.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
16	Tuberculosis	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2
16	Sepsis	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
17	AIDS.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1

18	Preparation for test lesson №6	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
18	Test lesson with microslides diagnostics № 6	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
1	The concepts of nosology, disease, etiology, patho-and thanatogenesis. International Classification of Diseases.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
2	Diagnosis. Pathological diagnosis: principles of formulation, structure and content.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
4	Clinical and pathoanatomical analysis of the results of research of surgical and biopsy material.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1

6	Clinical and pathological analysis of deaths from coronary heart disease and cerebrovascular diseases.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
7	Clinical and pathological analysis of deaths from diseases of the respiratory and digestive systems.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
8	Test lesson № 7	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
9	Clinico-pathological manifestations of HIV infection.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
11	Clinico-pathological analysis of deaths from tuberculosis.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1

12	Purulent septic diseases, nosocomial infection. Clinical and pathological analysis of deaths from sepsis.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
13	Test lesson № 8	Preparation for test lesson	- Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
15	Clinical and pathoanatomical aspects of terminal states.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
16	Clinical pathological anatomy of some complications of surgical specialties.	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1
18	Clinical and morphological analysis of the diagnostic and treatment process. Iatrogeny	Preparation for class study	- To study theoretical material on the topic. - To answer self-check questions from methodological recommendations	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	1

19	Test lesson № 9	Preparation for test lesson	Repeat the theoretical material on the topic of control classes. - Answer questions for self-control in the guidelines - repeat microslides	1. Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p. 2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p.	2

6.2. Instructional guidelines on students' out-of-class work organization

Individual work is done by students on the base of education materials of the discipline Pathology. Clinical Pathology and is held in the classrooms: it helps to learn the theoretical material and revise it with the help of basic and additional literature, to train practical skills with the help of microslides and gross specimen, handbooks of anatomical charts and methodological recommendations for practical classes published by department teachers.

Individual study of theoretical material by students involves working with educational, scientific and reference literature. This kind of work is planned by course topics given in the table 6.1. Outline of students' individual work. Topics and questions for self-study of Pathology. Clinical Pathology are grouped according to the parts and given in 6.3. Materials to carry out current monitoring and interim attestation of students' knowledge.

Recommended sources for studying the discipline is given in part 7. Educational, methodological and informational means.

During individual studying Pathology. Clinical Pathology recommended to use tests for self-check work (Pathology tests collection: study guide/ S.A. Mozerov, A.N. Myalin, V.Yu. Bulavkin. Penza: IIC PSU, 2004). To find out knowledge drawbacks in each topic it's recommended to use the tests system, worked out for each course part. It helps to estimate the mastering level of the theoretical material.

6.3. Materials to carry out current monitoring and interim attestation of students' knowledge

Competence mastering assessment

S.No.	Assessment type	Monitored topics (sections)	Competences that include components under assessment
1	Discussion	Part 1, 2, 3	GC-1, GPC-5, GPC-9, PC -6, PC -6, PC-20
2	Test assessment	Part 1, 2, 3	GC-1, GPC-5, GPC-9, PC -6, PC -6, PC-20
3	Practical skills	Part 1, 2, 3	GC-1, GPC-5, GPC-9, PC -6, PC -6, PC-20

Demonstrative test variant

1 Rheumatic disease is:
- A. tuberculosis
- B. diffuse scleroderma
- C. atherosclerosis
- D. amyloidosis
- E. arthrosis

2 Vitamin D deficiency is followed by:
- A. hyperostosis
- B. osteoporosis
- C. osteodysplasia
- D. All above is true

3 Name the cells of connective tissues synthesizing protides of collagen fibers:
- A. macrophage
- B. mast cell
- C. fibro-blast
- D. plasmacytes
- E. adipocytes

4 A patient with carcinoma of lung with multiple hematogenous metastasis had dark-brown skin stains, adynamia, hypotonia. The death happened from cachexia. Choose the most probable statements:

 A. The symptoms can be explained by the liver
 B. Dark-brown skin stains are connected with melanin
 C Brown atrophy is found in the heart
.D Dark-brown coloring of heart is determined by melanin
.E Brown induration of lungs is found out

5 Fermentative necrosis of adipose tissue is observed under:

 A. fat embolism
 B. acute hemorrhagic necrosis of pancreas gland
 C. tuberculosis peritonitis
 D. gangrene
 E. All above is true

6 Microcirculation is provided with all the named vessels except for:

 A. arteriola
 B. capillary tube
 C. postcapillary
 D. veins
 E. venule

7 All kinds of inflammation can be followed by complete recovery of an organ structure except for:

 A. croupous
 B. catarrhal
 C. hemorrhagic
 D. purulo-necrotic
 E. serous

8 Atrophy is:

 A. intravital cellular, tissue and organs shrinkage,
 B. Organs volume expansion through stroma overgrowth
 C. congenital shrinkage of cells, tissues, organs
 D. transition of one kind of tissue into another
 E. replacement of tissue in exchange for the lost one

9 Fibrosarcoma is characterized by:

 A. The location of tumor cells in the form of "herringbone"
 B. The location of tumor cells in the form of « moire »
 C. Metastatic spreading through hematogenic and lymphogenic ways

10 During astrocytoma malignancy, one of the signs is a change in the vessels in the form of:

 A. Hollowing
 B. obliteration
 C. proliferation (hyperplasia)
 D. Inflamation

Assessment criterion

- excellent – 90% and more correct answers;
- good - from 80% to 89% correct answers
- satisfactory – from 70% to 79% correct answers
- unsatisfactory – less than 70% correct answers.

Approximate questions for test classes

Test lesson №1

1. Pathology, its concept, goals and objectives, target of research, methods and levels of investigations. Clinic-anatomical direction of pathology.
2. Main stages of pathology development. Pathological service in our country.
3. Degeneration (dystrophy). Definitions. Degeneration as a disorder of (cell) metabolism and the forms of injury (alteration).
4. Degeneration classification: depending on the domination of morphological changes of special elements of parenchyma or stroma (parenchymatous, stromal-vascular or mixed), depending on the domination of metabolism disorders (protein, fat, carbohydrate, mineral), depending on genetic factors influence (inherited and acquired).
5. Parenchymatous albuminous degeneration: hyaline-drop, hydropic, keratinization. Morphological characteristics, reasons, pathogenesis.
6. Parenchymatous adipose degeneration. Thrush breast, hepatic steatosis, adipose degeneration of kidneys. Morphological characteristics, reasons, pathogenesis.
7. Parenchymatous carbohydrate degeneration. Degenerations connected with metabolic imbalance of glycogen. Morphology, reasons, pathogenesis of metabolic imbalance of glycogen under pancreatic diabetes.
8. Parenchymatous carbohydrate degeneration connected with metabolic imbalance of glucoproteins. Colloid degeneration. Morphological characterization, pathogenesis.
9. Stromal-vascular adipose degeneration: myxomatosis, fibrinoid degeneration (fibrinoid), hyalinosis as the stages of a morphological process. Causes, pathogenesis, outcomes.
10. Amyloidosis. Morphological characteristics, causes, pathogenesis. Classification of amyloidosis, classification of its forms.

Test lesson №2

1. Necrosis. Definition of necrosis as local death. Idea of apoptosis. Classification of necrosis depending on reasons which led to necrosis. Morphological signs of necrosis.
2. Clinicopathologic forms of necrosis, their characterization. Essence of necrosis and its outcomes.
3. Death. Causes of death. Clinical and biological death. After-death changes, their morphological characterization.
4. Definition of general and local circulatory disturbance, their interrelation, classification.
5. Arterial plethora. Causes, types, morphology. General and local arterial plethora.
6. General and local congestion, acute and chronicle. Internals changes during acute congestion, its outcomes. Internals changes during chronicle venostasis (chronicle cardiovascular collapse). Morphogenesis of stagnant sclerosis.
7. Anaemia. Causes, pathogenesis, morphology, complications, cause of death.
8. External and internal haemorrhage, bleedings. Hemorrhagic diathesis. Plasmorrhagia. Causes, pathogenesis, morphological characterization.
9. Stasis. Causes, pathogenesis, morphological characterization, types, stasis consequences. Prestasis, sludged blood fenomenon. Thrombosis. Causes, mechanisms of thrombus formation. Thrombus, its types, morphological characterization, outcomes.
10. Local and general factors of thrombosis. Disseminated intravascular coagulation. Essence of thrombosis.

Test lesson №3

1. Tumors. Essentials of tumor growth, tumor expansion. Tumor etiology.
2. Morphogenesis and histogenesis of tumors. Precancerous lesion and changes, its essentials, morphology. Dysplasia and cancer.
3. Idea of neoplastic proliferation. Immune response to the tumor. Essence of biopsy in oncology.

4. Tumor structure, peculiarities of tumor cell. Essentials of atypism, its types. Forms of tumor growth (expansive, infiltrate and appositive; exophytic and endophytic).
5. Benign and malignant tumors and tumors with local destructive growth. Malignance criteria. Idea of relapse.
6. Modern tumor classification. Its principles. Secondary changes of tumors.
7. Epithelioma without specific location. Benign and malignant. Histological variants of cancer.
8. Organ-specific tumors. Definition. Benign and malignant tumors of skin, thyroid, adrenals, hypophysis and epiphyse.
9. Organ-specific tumors. Benign and malignant tumors of alvus, mammary gland.
10. Mesenchymal tumors (benign and malignant). Sarcoma, its types.

Test lesson №4

1. Atherosclerosis. Etiology and pathogenesis. Pathology. Atherosclerosis stages. Atherosclerosis of aorta. Morphology of complications, outcomes.
2. Clinicopathologic forms of atherosclerosis: atherosclerosis of cerebrum arteries, renal arteries, intestinal canal, heart, lower extremity arteries.
3. Hypertensive disease. Symptomatic hypertonia, its types. Relations of hypertonia and atherosclerosis.
4. Etiology and pathogenesis of hypertonia. Pathology. Morphological presentation of hypertensic crisis. Clinicopathologic forms of hypertensive disease, their characterization, cause of death.
5. Ischemic heart disease (coronary heart disease). Definition, relations with atherosclerosis and hypertonia. Etiology and pathogenesis, risk factors.
6. Myocardial infarction. Etiology. Pathogenesis. Pathology. Complications, causes of death.
7. Chronicle ischemic heart disease. Etiology. Pathogenesis. Pathology. Complications, causes of death.
8. Rheumatism. Etiology, pathogenesis, pathology. Clinic-anatomical forms: polyarthritic, cerebral, nodose.
9. Cardiovascular form of rheumatism. Pathology. Complications, causes of death.
10. Systemic lupus erythematosus. Etiology, pathogenesis, pathology. Changes of vessels, kidneys, heart. Complications, causes of death.

Test lesson №5

1. Esophagus diseases. Esophageal cancer. Etiology, pathogenesis. Forms of growth. Pathology. Complications.
2. Acute gastritis and chronic gastritis. Etiology, pathogenesis, pathology, complications. Chronic gastritis as pre-cancerous condition of stomach.
3. Peptic ulcer. Etiology, pathogenesis. Essentials of symptomatic ulcers. Pathology during an acute period and remission. Complications. Outcomes.
4. Appendicitis. Etiology, pathogenesis, pathology of acute and chronic appendicitis. Complications.
5. Colon cancer. Etiology, pathogenesis, forms, pathology. Laws of metastasis spreading. Complications.
6. Massive hepatic necrosis. Fatty hepatosis (hepatic steatosis). Etiology, pathogenesis, pathology, complications.
7. Viral hepatitis. Classification of viral hepatitis. Etiology, epidemiology and pathogenesis. Clinicopathological forms, their morphological characterization. Complications, outcomes.

Test lesson №6

1. Hypertrophy of the prostate gland. Forms, morphology. Complications. Glandular hyperplasia of the endometrium. Morphological characteristic.
2. Dishormonal dysplasia of the breast. Non-proliferative and proliferative form. Morphology. Outcomes
3. Cervical cancer. Cancer of the body of the uterus. Frequency. Pre-cancerous conditions. Forms of growth. Histological forms. Patterns of metastasis.
4. Breast cancer. Frequency. Pre-cancerous conditions. Forms of growth. Histological forms. Patterns of metastasis.
5. Fistula, placental polyp. Chorionepithelioma. Morphological characteristic. Complications.

6. Viral diseases. Acute respiratory viral infections. Measles flu. Etiology, epidemiology, pathological anatomy, complications, causes of death.
7. Viral diseases. Smallpox as a quarantine disease. Rabies. Etiology, epidemiology, pathological anatomy, complications, causes of death.

Test lesson №7

1. Tasks and methods of the pathoanatomical service.
2. The procedure for opening the corpses of the deceased in inpatient medical institutions and at home. Features of the opening of the fruit, stillborn, newborns.
3. Organization of work and documentation of the pathoanatomical department and pathoanatomical bureau. Medical certificate of death and medical certificate of perinatal death.
4. Diagnosis, structure and logic of clinical and pathologo-anatomical diagnosis. The concept of the underlying disease, complication, concomitant disease. Combined primary disease: competitive, combined, background.
5. International classification and nomenclature of diseases.
6. Features of the diagnosis in surgical intervention, in cases of iatrogenic. Features of the diagnosis in perinatology.
7. Comparison of clinical and pathoanatomical diagnoses, detection of diagnostic errors and their analysis. Causes (objective and biased) diagnostic errors.

Test lesson №8

1. HIV infection. Epidemiology. Etiology, pathogenesis, stages, clinical and morphological manifestations. Complications, causes of death.
2. Tuberculosis. Etiology, epidemiology, classification. Primary tuberculosis, variants of the course. Morphological characteristic.
3. Hematogenous tuberculosis. Classification. Morphological characteristics of varieties of hematogenous tuberculosis. Complications.
4. Secondary tuberculosis. Classification. Features of secondary tuberculosis. Morphological characteristic. Formation of phases of secondary tuberculosis. Complications.
5. Sepsis as a special form of infection. Features of sepsis. Etiology, pathogenesis, relationship of macro - and microorganism. Classification.
6. Septicemia; pathological anatomy, complications, causes of death.

Test lesson №9

1. General information about terminal states.
2. Clinical and morphological characteristics of the cardiac left ventricular type of the terminal state; terms of development, causes, macro- and microscopic signs.
3. Clinical and morphological characteristics of the cardiac right ventricular type of the terminal state; terms of development, causes, macro- and microscopic signs.
4. Clinical and morphological characteristics of the pulmonary type of the terminal state; terms of development, causes, macro- and microscopic signs.
5. Clinical and morphological characteristics of the cerebral type of the terminal state; terms of development, causes, macro- and microscopic signs.
6. Major morphological changes in terminal states in the central nervous system; circulatory disorders, swelling and swelling of the brain, changes in nervous tissue, coma.
Major morphological changes in terminal conditions

Assessment criterion

«5» - the grade «excellent» is given for full answer without mistakes. A student knows the material well.
«4» - the grade «good» is given for a correct, but not complete answer.
«3» - the grade «satisfactory» is given for an answer with significant mistakes.

«2» - the grade «unsatisfactory » is given, if a student makes serious mistakes and doesn't know the material at all.

Approximate differentiated test questions

1. Pathology, its concept, goals and objectives, target of research, methods and levels of investigations. Clinic-anatomical direction of pathology.
2. Main stages of pathology development. Pathological service in our country.
3. Degeneration (dystrophy). Definition. Degeneration as a disorder of (cell) metabolism and the forms of injury (alteration).
4. Degeneration classification: depending on the domination of morphological changes of special elements of parenchyma or stroma (parenchymatous, stromal-vascular or mixed), depending on the domination of metabolism disorders (protein, fat, carbohydrate, mineral), depending on genetic factors influence (inherited and acquired).
5. Parenchymatous albuminous degeneration: hyaline-drop, hydropic, keratinization. Morphological characteristics, reasons, pathogenesis.
6. Parenchymatous adipose degeneration. Thrush breast, hepatic steatosis, adipose degeneration of kidneys. Morphological characteristics, reasons, pathogenesis.
7. Parenchymatous carbohydrate degeneration. Degenerations connected with metabolic imbalance of glycogen. Morphology, reasons, pathogenesis of metabolic imbalance of glycogen under pancreatic diabetes.
8. Parenchymatous carbohydrate degeneration connected with metabolic imbalance of glucoproteins. Colloid degeneration. Morphological characterization, pathogenesis.
9. Stromal-vascular adipose degeneration: myxomatosis, fibrinoid degeneration (fibrinoid), hyalinosis as the stages of a morphological process. Causes, pathogenesis, outcomes.
10. Amyloidosis. Morphological characteristics, causes, pathogenesis. Classification of amyloidosis, classification of its forms.
11. Parenchymatous adipose degeneration connected with the metabolic imbalance of neutral fat. General fatty degeneration. Causes, pathogenesis. Morphological characterization, classification.
12. Cachexia. Causes, pathogenesis, morphological presentation. Local fatty degeneration (lipomatosis) and regional lipodystrophy.
13. Mesenchymal carbohydrate degeneration connected with the metabolic imbalance of glucoprotein and mucopolysaccharide - mucilagination. Morphological characterization. Causes, pathogenesis.
14. Mixed degeneration. Classification. Endogenous pigments, their types. Metabolic imbalance of hematogenous pigments. General and local hemosiderosis.
15. Metabolic imbalance of hematogenous pigments. Hemosiderosis, hemochromatosis, porphyria. Clinic morphological characterization, outcomes.

Assessment criterion

«5» - the grade «excellent» is given for full answer without mistakes. A student knows the material well.

«4» - the grade «good» is given for a correct, but not complete answer.

«3» - the grade «satisfactory » is given for an answer with significant mistakes.

«2» - the grade «unsatisfactory » is given, if a student makes serious mistakes and doesn't know the material at all.

Practical skills / List of microslides for test lessons:

1. To study microslides with the help of optic microscope (low and high magnification).
2. To identify current pathological process of organs, tissues using microslides.
3. To identify the disease by the totality and severity of general pathological processes.

Test lesson №1
4 – hydropic degeneration of chorionic villi
73 – Initial alcoholic hepatosis (hepatic steatosis)
90 – leukokeratosis of uterine cervix epithelium
103 – skin during psoriasis
9 – hyalinosis of papillary thyroid cancer caps
69 – fibrinoid swelling of the heart valve
107 – amyloid nephrosis with shrinkage
30 – atherocalcinosis of popliteal artery
39 – a bone during myelomatosis
117 – melanoma (eye cornea)
10 – papillomatous pigmented naevus
107a – lardaceous kidney (coloring - Congo red)

Test lesson № 2.
35 – pancreanecrosis
42 – focal necrosis of kidneys
57 – renal infarct with haemorrhagic corolla
75 – bowel wall infarct
123 – hemorrhagic lung infarction
126 – splenic infarction
32 – myocardial infraction
140 – brain infarction
28 – haemorrhagic brain infiltration. Hemorrhages into brain tissues and cyst formation. Vessels stasis.
56 – nutmeg liver
20 – hemorrhoidal venous distensibility
23 – hemorrhages into soft tissues (adipose tissue)
118– thromboembolia of the lung artery
136 – acute congestion of lungs, oedema
41 – purulent trichomonas colpitis
48 – acute purulent pyelonephritis
67 – acute bronchopneumonia
54 – tuberculous granuloma of liver
55 – tuberculocele (epididymitis)
108 – nasal polyp
119 – granuloma of extraneous body
137 – granulation gaster polyp
143 – sarcoidoses of lymph glands
51 – malignant carcinoid of blind intestine
36 – panmyelophthisis
27 – autoimmune thyroiditis
145 – Riedel thyroiditis
16 – hypertrophy of vein wall under varicose disease
25 – skin atrophia
26 – prostatic hypertrophy

Test lesson № 3.
40 – chronic bronchitis with metaplasia and dysplasia of metaplasia epithelium
150 – intestinal metaplasia of gastric gland epithelium
5 – small cell carcinoma of lung
21- papillary thyroid cancer
52 – keratinizing squamous cell carcinoma of a lung
58 – bronchogenic lung cancer
120 – tubular gaster adenoma
95- renal cell kidney cancer

151 - clear cell adrenal adenoma
62 – glandular carcinoma of prostata gland
13- cavernous liver haemangioma
86 – cavernous skin haemangioma
12 – giant cell tumor of bone
96 – chondroma
141- metastasis of leiomyosarcoma uteri into liver
105 – leiomyomata
114 – glioblastoma multiforme
89 – psammomatous meningioma
10 – papillomatous pigmented naevus
111 – astrocytoma of brain-growth
65 – melanoma metastasis into lymph gland
39 – myeloma disease
17 – spleen with lymphogranulomatosis

Test lesson №4
30 - atherosclerosis and calcinosis of muscular type artery
69 – fibrinoid swelling of the heart cardiac valve
144 – aortic aneurysm with breaking
28 – haemorrhagic brain infiltration. Hemorrhages into brain tissues and cyst formation. Vessels stasis.
104 – cerebral oedema under transitory ischaemic attack
140 – brain infarction
1 – myocardial infarction with thrombus repatency
56 – nutmeg liver
77 – seropurulent myocarditis
101 – macrofocal postinfarction cardiosclerosis
135 – myocardial infarction (24-48 hours)
136 – acute congestion of lungs, oedema
33 – lupus nephritis
14 – seropurulent pneumonia
29 – lobar pneumonia
74 – seropurulent pleuritis
5 – small cell lung cancer
40 – chronic bronchitis with metaplasia and dysplasia of metaplasia epithelium
52 – cellular and tissue atypism of keratinizing squamous cell carcinoma
58 – bronchogenic lung cancer

Test lesson №5
7 – metastasis gastric adenocarcinoma
43 – chronic gaster ulcer (acute period)
44 – chronic superficial gastritis
82 – purulent esophagitis
120 – tubular gaster adenoma
51 – malignant carcinoid of blind intestine
68 – chronic appendicitis
75 – gut wall infraction
88 – chronic hemorrhoid
129 – nonspecific ulcerative colitis
146 – acute phlegmonous appendicitis
91 – mucus-producing adenocarcinoma of straight intestine
22 – chronic-active recidivating hepatitis with apostasis
31 – cholestatic hepatitis
35- pancreanecrosis
46 – chronic hepatitis C

56 – nutmeg liver
73 – primary hepatic steatosis under alcoholism (alcoholic hepatosis)
94 – hepatocellular liver cancer
128 – metastasis of glandular carcinoma into liver
133 – hemorrhagic necrosis of pancreas gland
27 – autoimmune active thyroadenitis
33 – lupus nephritis
48 – acute purulent pyelonephritis
59 – intracapillary glomerulonephritis
63 – metastasis of glandular carcinoma into kidney capsule
95 – kidney cancer
100 – extracapillary productive glomerulonephritis
102 – chronic glomerulonephritis

Test lesson №6
3 – chorionepithelioma
26 – prostatic hypertrophy
41 – purulent (trichomanad colpitis)
47 – nabotova cyst in the cervix
62 – prostate Cancer (Adenocarcinoma)
90 – leukoplakia cervical epithelium
105 – leomyoma of the uterus
115 – breast cancer
121 – fibrous glandular polyp of the cervix
127 – glandular endometrial polyp
2 – hemorrhagic pneumonia with influenza
78 – intradermal contagious skin clam
19 – miliary lung tuberculosis
55 – tuberculous orchitis (epididymitis)
106 – lung tuberculosis
77 – serous myocarditis
134 – purulent destruction. pneumonia in sepsis
139 – septic valve endocarditis

List of microslides for the exam

№	Name of microslides	№
1	purulent trichomonas colpitis	41
2	acute congestion of lungs, oedema	136
3	thromboembolia of the pulmonary artery	118
4	hemorrhages into soft tissues (adipose tissue)	23
5	hemorrhoidal venous distensibility	20
6	nutmeg liver	56
7	hemorrhagic brain infiltration. Hemorrhages into brain tissues and cyst formation.	28
8	brain infarction	140
9	myocardial infraction	32
10	splenic infarction	126
11	hemorrhagic lung infarction	123
12	bowel wall infarct	75
13	renal infarct with hemorrhagic corolla	57
14	focal necrosis of kidneys	42
15	pancreatonecrosis	35
16	papillomatous pigmented naevus	10
17	melanoma (eye cornea)	117
18	a bone during myelomatosis	39

19	atherocalcinosis of popliteal artery	30
20	fibrinoid swelling of the heart valve	69
21	skin under psoriasis	103
22	giant cell tumor of bone	12
23	cavernous skin haemangioma	86
24	cavernous liver haemangioma	13
25	renal cell kidney carcinoma	95
26	keratinizing squamous cell lung carcinoma	52
27	papillary thyroid cancer	21
28	intestinal metaplasia of gastric gland epithelium	150
29	chronic bronchitis with metaplasia and dysplasia of metaplasia epithelium	40
30	prostatic hypertrophy	26
31	atrophia cutis	25
32	hypertrophy of vein wall under varicose disease	16
33	Riedel thyroiditis	145
34	autoimmune thyroiditis	27
35	sarcoidoses of lymph glands	143
36	granuloma of extraneous body	119
37	nasal polyp	108
38	tuberculocele (epididymitis)	55
39	acute bronchopneumonia	67
40	acute purulent pyelonephritis	48
41	melanoma metastasis into lymph gland	65
42	psammomatous meningioma	89
43	aortic aneurysm with breaking	144
44	myocardial infarction with thrombus repatency	1
45	seropurulent myocarditis	77
46	postinfarction cardiosclerosis (scar formation stage)	109
47	lobar pneumonia	29
48	seropurulent pleuritis	74
49	keratinizing squamous cell lung carcinoma	52
50	myocardial infarction	135
51	carcinoma of lung with the penetration into esophagus	60
52	Metastasis gastric adenocarcinoma into liver	7
53	chronic gaster ulcer (acute period)	43
54	chronic superficial gastritis	44
55	purulent esophagitis	82
56	chronic appendicitis	68
57	chronic hemorrhoid	88
58	acute phlegmonous appendicitis	146
59	chronic-active recidivating hepatitis with apostasis	22
60	chronic hepatitis C . micronodular liver cirrhosis	46
61	primary hepatic steatosis under alcoholism (alcoholic hepatosis)	73
62	pheocromocitoma (benigh)	124
63	hydropic degeneration of chorionic villi	4
64	leiomyomata	105
65	hemorrhagic pneumonia under influenza	2

Sample list of gross specimen

1. brain-growth.
2. Liver pelvis cancer
3. Serous cystadenoma of oophoron.

4. Metastasis of the uterus chorionepithelioma to the lung.
5. callous gastric ulcer
6. fallopian pregnancy
7. dysenteric large bowel ulcers.
8. Gall bladder cancer.
9. cerebral haemorrhage.
10. postinfarction macrofocal cardiosclerosis.
11. atrophic enteritis.
12. arteriosclerotic kidney under hypertensive disease.
13. sclerodermic kidney.
14. bronchiectasia and pneumonosclerosis.
15. atherosclerosis of aorta with aneurysm.
16. gallstones.
17. hepatic cirrhosis.
18. lobar pneumonia (gray hepatization stage).
19. amyloid renal scarring.
20. cerebriform swelling stage (typhoid fever).

Assessment criterion

- **excellent** – a student shows systematic theoretical knowledge (knows how to work with a microscope), determines the pathological process of organs and tissues on the microslides without any mistakes or help, correctly determines the pathological process on of macropreparations
- **good** – a student shows systematic theoretical knowledge (knows how to work with a microscope), determines the pathological process of organs and tissues on the microslides with some insignificant mistakes, which he/she finds on his/her own and corrects them.
- **satisfactory** — a student shows satisfactory theoretical knowledge (knows main items of microscope work methodic), makes mistakes while identifying the pathological process on the microslides, which he/she can correct under the teacher's guidance.
- **unsatisfactory** — a student doesn't show even poor theoretical knowledge (doesn't know microscope work methodic) and identify the pathological process of organs and tissues incorrectly.

7. Educational, methodological and informational means

Basic literature:

1.Pathology: students book. Strookov A.I., Serov V.V. / ed. by V.S. Paukov. 6th edition, 2013. - 880 p.http://www.studmedlib.ru/ru/book/ISBN9785970424803.html

2. Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V., Boikova S.P., Dorofeev D.A., etc. / ed. by O.V. Zaratianz. 2010. – 472 p. http://www.studmedlib.ru/ru/book/ISBN9785970412848.html

Additional literature:

1.Respiratory system pathology / ed. by member of RANS professor V.S. Paukov . – M.: Litters, 2013. - 272 p. http://www.rosmedlib.ru/book/ISBN9785423500764.html

2.Pathology. Handbook of anatomical charts: study guide. Zaratianz O.V. and others / ed. by O.V. Zaratianz. 2012. - 960 p. http://www.studmedlib.ru/ru/book/ISBN9785970420072.html.

3. Pathology: questions and answers: study guide . – 2nd edition. – M.: GOTAR-Media, 2007. – 176 p. http://www.studmedlib.ru/ru/book/ISBN9785970404126.html

Online sources

1. Online library system Student consultant http://www.studmedlib.ru/
2. Scientific electronic library http://elibrary.ru
3. One stop solution to educational resources http://window.edu.ru -

8. Material and technical means provided for subject

№	Name of the discipline (module), practice in accordance with the curriculum	Name of special rooms and rooms for independent work	Equipment of special rooms and areas for independent work	List of licensed software. Details of the confirming document
	Pathological anatomy, clinical pathological anatomy	Lecture room 1-309	A set of educational furniture: tables, chairs, multimedia system (projector, screen, laptop)	Microsoft Windows (DreamSpark / Microsoft Imagine Standard subscription); registration number 00037FFEBACF8FD7, contract number SD-130712001 dated 07/12/2013; - Kaspersky Anti-Virus 2016-2017, registration number KL4863RAUFQ, contract No. ХП-567116 dated August 29, 2016; freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe Acrobat Reader; 7zip.
		State Budgetary Health Institution "Regional Bureau of Forensic Medical Examination" Pathoanatomical department No. 2 classroom for practical training, group and individual consultations, current and intermediate certification, independent work of students - audience 1	A set of educational furniture: teacher's desk, training tables, chairs, blackboard. Microscope medical MIKMED 5 - 6 pcs. Microscope medical MIKMED 6 - 1pc.Complex image visualization based on a TSA 9-0 digital video camera for MIKMED 6 Microscope - 1 pc. Sets of micropreparations on discipline topics.TV - 1 pc. Laptop - 1 pc. Visual aids (posters).	Freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe Acrobat Reader; 7zip.
		State Budgetary Health Institution "Regional Bureau of Forensic Medical Examination" Pathoanatomical department No. 2 classroom for practical training, group and individual consultations, current and intermediate certification, independent work of students - audience 2	A set of educational furniture: teacher's desk, training tables, chairs, blackboard Microscope medical MIKMED 5 - 6 pcs. Microscope medical MIKMED 6 - 1pc. Complex image visualization based on a TSA 9-0 digital video camera for MIKMED 6 Microscope - 1 pc. Sets of micropreparations on discipline topics. TV - 1 pc. Laptop - 1 pc. Visual aids (posters).	Freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe Acrobat Reader; 7zip.
		State Budgetary Health Institution "Regional Bureau of Forensic	A set of educational furniture: teacher's desk, training tables, chairs, blackboard	freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe

		Medical Examination" Pathoanatomical department No. 2 classroom for practical training, group and individual consultations, current and intermediate certification, independent work of students - audience 3	Microscope medical MIKMED 5 - 6 pcs. Microscope medical MIKMED 6 - 1pc. Complex image visualization based on a TSA 9-0 digital video camera for MIKMED 6 Microscope - 1 pc. Sets of micropreparations on discipline topics. TV - 1 pc. Laptop - 1 pc. Visual aids (posters).	Acrobat Reader; 7zip.
		State Budgetary Health Institution "Regional Bureau of Forensic Medical Examination" Pathoanatomical department No. 2 classroom for practical training, group and individual consultations, current and intermediate certification, independent work of students - audience 4	A set of educational furniture: teacher's desk, training tables, chairs, blackboard Microscope medical MIKMED 5 - 6 pcs. Microscope medical MIKMED 6 - 1pc. Complex image visualization based on a TSA 9-0 digital video camera for MIKMED 6 Microscope - 1 pc. Sets of micropreparations on discipline topics. TV - 1 pc. Laptop - 1 pc. Visual aids (posters).	freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe Acrobat Reader; 7zip.
		State Budgetary Health Institution "Regional Bureau of Forensic Medical Examination" Pathoanatomical department No. 2 classroom for practical training, group and individual consultations, current and intermediate certification, independent work of students - audience 5	A set of educational furniture: teacher's desk, training tables, chairs, blackboard Microscope medical MIKMED 5 - 6 pcs. Microscope medical MIKMED 6 - 1pc. Complex image visualization based on a TSA 9-0 digital video camera for MIKMED 6 Microscope - 1 pc. Sets of micropreparations on discipline topics. TV - 1 pc. Laptop - 1 pc. Visual aids (posters).	freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe Acrobat Reader; 7zip.
		State Budgetary Health Institution "Regional Bureau of Forensic Medical Examination" Pathoanatomical department No. 2 classroom for practical training, group and individual consultations, current and intermediate certification, independent work of students - audience 6	A set of educational furniture: teacher's desk, training tables, chairs, blackboard Microscope medical MIKMED 5 - 6 pcs. Microscope medical MIKMED 6 - 1pc. Complex image visualization based on a TSA 9-0 digital video camera for MIKMED 6 Microscope - 1 pc. Sets of micropreparations on discipline topics. TV - 1 pc. Laptop - 1 pc.	freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe Acrobat Reader; 7zip.

			Visual aids (posters).	
		The premises of the clinic in accordance with the contract with the hospital: sectional halls	Projection tables projection tools anatomical dishes and containers for storing drugs	
		Rooms for students' individual work: PSU 10-204	A set of educational furniture: tables, chairs, educational board, computers with educational CD-disks	Microsoft Windows (DreamSpark / Microsoft Imagine Standard subscription); registration number 00037FFEBACF8FD7, contract number SD-130712001 dated 07/12/2013; - Kaspersky Anti-Virus 2016-2017, registration number KL4863RAUFQ, contract No. ХП-567116 dated August 29, 2016; freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe Acrobat Reader; 7zip.
		Rooms for students' individual work: PSU 10-209	A set of educational furniture: tables, chairs, educational board, computers with educational CD-disks	Microsoft Windows (DreamSpark / Microsoft Imagine Standard subscription); registration number 00037FFEBACF8FD7, contract number SD-130712001 dated 07/12/2013; - Kaspersky Anti-Virus 2016-2017, registration number KL4863RAUFQ, contract No. ХП-567116 dated August 29, 2016; freeware software: Open Office; Mozilla Firefox; Google Chrome Adobe Acrobat Reader; 7zip.

The study program of the discipline Pathology. Clinical Pathology was composed in compliance with requirements of FSES HE and the curriculum for the specialty 31.05.01 – General Medicine

The program was compiled by:

L.A. Sorokina, Candidate of Medical Sciences, Associate Professor of the Department of Clinical Morphology and Forensic Medicine with Oncology Basics ____________

Verification and correction are executed by Y.A. Didyk, associate professor, department of translation.

The program was approved at a meeting of the Department of Clinical Morphology and Forensic Medicine with Oncology Basics

Record No. 7 dated "4" 03 20 16.

Head of the Department
A.S. Kuprushin, Candidate of Medical Sciences ____________

The program was approved by

Dean of the Faculty of Medicine
I.Y. Moiseeva, Doctor of Medical Sciences, Professor ____________

The program was approved by the methodological committee of the Medical Institute

Record No. 7 dated "5" 03 20 16.

Head of the methodological committee of the Medical Institute,
O.V .Kalmin, Doctor of Medical Sciences, Professor ____________

Перевод выполнен корректно, соответствует оригиналу на русском языке

Переводчик ОСМИ ПГУ [illegible] М.В.

Data on re-approval of the program for consecutive academic years and record of alterations

Academic year	Department decision (Record No., date, signature of head of the department)	Introduced alterations	Page number		
			changed	new	annulled