

**MINISTRY OF HEALTH OF UKRAINE
BOGOMOLETS NATIONAL MEDICAL UNIVERSITY**

«Approved»

Vice rector for scientific and pedagogical
work of Bogomolets National Medical
University

associate professor E. V. Stechenko

" _____ " _____ 2016

**DEPARTMENT OF PATHOLOGICAL ANATOMY №2
WORKING PROGRAM OF THE SUBJECT
«PATHOMORPHOLOGY»**

(name of a subject matter)

22 «Health care»

direction of preparation _____
(code and name of the direction of preparation)

221 «Stomatology»

speciality _____
(code and name of specialty)

specialization _____
(name of specialization)

Dentistry

faculty _____
(name of faculty)

The working program is made on the basis of program « Pathomorphology. Program of a subject matter for students of the highest medical educational institutions of III-IV levels of accreditation», specialty "stomatology", Kyiv, 2010

(name of the standard program, approval date)

Developers: doctor of medical sciences, professor S. G. Gychka, manager of department, candidate of medical sciences P. V. Kuzyk, associate professor

(authors, their positions, academic degrees and academic statuses)

The working program is approved at
department of pathological anatomy №
2 meeting

Approved by the cyclic commission of
NMU of O.O. Bogomolets

The protocol from
" __ " _____ 2016 № 1

The protocol from
" ____ " _____ 2016 № __

Head at department

Head of the commission

Prof. S. G. Gychka

Prof. V. G. Cherkasov

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(surname and initials)

(signature)

(surname and initials)

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I. EXPLANATORY NOTE

The working training program on discipline «Pathomorphology» is made for students of dental faculty of NMU of O.O. Bogomolets 221 "Stomatology" of the direction of preparation 22 "Health care". Studying of a pathomorphology is performed during the IV-V semesters of 2nd and 3rd years of training.

The program is made according to the following regulating documents:

- The standard training program for students of the higher educational institutions of Ukraine of III-IV levels of accreditation for the qualification specialist level in 7.110106 "Stomatology" with qualification "dentist" of the direction of preparation 1101 "Medicine" from 01.07.2010;
- The Educational and Qualification Characteristics (EQC) and the educational and professional programs (EPP) of training of specialists approved by the order MES of Ukraine from 16.04.03 on № 239 "About the statement of the making industry standards of the higher education in the direction of preparation 1101 "Medicine";
- Resolution of Cabinet Council of Ukraine from 21.01.1998 № 65 "On step education";
- Resolution of Cabinet Council of Ukraine from 07.08.1998 № 1247 "On state standards of the higher education";
- The order of MES of Ukraine from 31.06.1998 № 285 "On requirements of state standards";
- The order MHC of Ukraine from 24.02.2000 № 35 "On features of step formation of the medical and pharmaceutical direction";
- The order MHC of Ukraine from 22.03.2004 № 148 "On actions for implementation of provisions of the Bologna declaration in system of the higher medical and pharmaceutical education";
- The order MES of Ukraine from 09.07.2009 № 642 "On the organization of studying of humanitarian disciplines for the free choice of the student";
- The order MH of Ukraine from 07.12.2009 № 929 "On the statement and introduction of the new curriculum of training of specialists of the educational and qualification specialist level of qualification "dentist" in higher educational institutions of IV level of accreditation in "stomatology".

The program is structured on modules, semantic modules, subjects.

Morphology as subject matters:

a) is based on studying by students of medical biology, medical and biological physics, inorganic, physical-colloid and bioorganic chemistry, human anatomy, histology, cytology and embryology, microbiology, virology and immunology and it is integrated with these disciplines; studying of discipline is based also on modern data of a morphological research (electronic microscopy, an immunohistochemistry, an autoradiography, a histochemistry and cytochemistry);

b) puts a comprehension of a basis of cell pathology and the common pathological processes which set causes morphological displays of other diseases;

c) puts the main knowledge of morphology of diseases at different stages of their development (morphogenesis), structural bases of convalescence, complications and consequences of diseases;

d) studies options of a pathomorphology of the diseases arising in connection with changing living conditions of the person, and as a result of various medical actions (therapy pathology);

e) lays the foundations of knowledge of the organization of pathoanatomical service and its appointment.

Comparison of morphological and clinical displays of diseases at all stages of their development, pathological states and diseases of the oral cavity allows students to receive skills of the clinical and anatomical analysis, synthetic generalization of diagnostic symptoms of diseases and their right interpretation in cause and effect ratios.

The organization of educational process is carried out on credit and modular system according to requirements of Bologna Process.

The program of discipline is structured on modules which includes blocks of substantial modules. The volume of an academic load of students is described in ECTS credits - the test credits which are set off to students at successful assimilation of the corresponding module by them (the test credit).

The discipline is structured on 2 modules which include blocks of substantial modules:

Module 1. Common pathological processes.

Semantic modules:

1. Introduction. Morphology of injury and death of cells and tissues.
2. Defects of blood and lymph circulation.
3. Inflammation. Immunopathological processes. Regeneration. Processes of adaptation and compensation
4. Tumors. Diseases of system of blood.

Module 2. Special pathomorphology.

Semantic modules:

5. Diseases of cardiovascular system..
6. Diseases of respiratory organs. Diseases of digestive organs.
7. Diseases of endocrine system. Diseases of urinogenital system. Diseases of pregnancy and puerperal period. Pathological conditions of the head as a result pre-and perinatal pathology.
8. Pathology of dentoalveolar system and organs of an oral cavity.
9. Pathomorphology of infectious diseases.

The credit and modular system of the organization of educational process induces students to study systematically within academic year.

Types of educational activity of students according to the curriculum are: a) lectures, b) practical training, c) self-contained work of students (SCWS).

Subjects of a lecture course open problematic issues of corresponding sections of a pathomorphology.

Practical training provides:

1) research students of macroscopic changes of the struck isolated organs and systems at the common or special pathological processes;

2) research students of microscopic changes of the struck cells, tissues and organs at the common or special pathological processes;

3) the solution of the situational tasks (assessment of morphological changes at various pathological processes) having the clinical and anatomic direction.

Students are recommended to keep protocols of a practical training (workbooks) in which they describe macroscopic and microscopic changes of organs, tissues and cells in those or other pathological processes and paint a separate micro specimens.

Departments have the right to make changes to the training program within 15% depending on organizational and technical capabilities, the directions of scientific research, ecological features of the region, but have to fulfill in general the volume of requirements on discipline according to ultimate goals of EQC and EPP for specialty preparation and the curriculum.

The current educational activity of students is controlled on practical trainings according to specific goals and during individual work of teacher with students.

There are recommended to use the following means of diagnostics of level of preparation of students: computer tests, solving situational problems; structured written work; structured procedure for the control of practical skills (assessment of knowledge and skills to analyze and interpret macro - and microscopic changes of cells, tissues, organs and systems with those or other pathological processes), interview.

The total module control is carried out at the end of the study module.

Assessment of progress of the student on discipline is rating and is exposed on a multiball scale as average arithmetic assessment of assimilation of the corresponding modules and has definition on the ECTS and a traditional scale accepted in Ukraine.

Description of a subject matter

Name of indexes	Branch of knowledge, direction of preparation, educational and qualification level	Characteristic of a subject matter	
		day form of education	evening form of education
Quantity of the credits-5,5	direction of preparation 22 "Health care" <hr/> (code and name)	day form	
Modules – 2	Specialty: 22 " Stomatology" <hr/> (code and name)	Year of preparation:	
Semantic modules – 8		The 2015th	The 2016th
Individual research assignment		Semester	
Total of hours- 165		IV	V
Week loading	Educational and qualification level: "Specialist "	Lectures	
		1 0 h	1 0 h
		Practical, seminar	
		40 h	50 h
		Laboratory	
		0 h	0 h
Self-contained work			
		25 h	30 h

		Individual tasks	
		Type of monitoring	
		TMC	TMC

Note: 1 credit of ECTS - 30 hours

Classroom loading - 66,7%, SCWS- 33, 3%

II. PURPOSE OF STUDYING OF THE SUBJECT MATTER

The purpose of studying of a pathomorphology is ultimate goals which are established on the basis of EPP of training of the dentist according to the block of its substantial module (the professional focused fundamental preparation) and is a basis for creation of maintenance of a subject matter. The description of the purposes is formulated through abilities in the form of target tasks (actions). On the basis of ultimate goals to each module or the substantial module specific goals in the form of particular abilities (actions), target tasks providing achievement of an ultimate goal of studying of discipline are formulated. Ultimate goals are located at the beginning of the program and precede its contents, specific goals precede the maintenance of the corresponding substantial module.

Ultimate goals of discipline:

- *To analyze structurally functional interrelations of communication and the sequence of stages of the common pathological processes.*
- *To interpret pathology of a cage and to prove clinical and morphological characteristics of the all-pathological processes causing manifestation of diseases.*
- *To define an etiology, a pathogenesis and morphological changes at different stages of disease, structural bases of convalescence, complications and consequences of diseases.*

III. CONTENTS OF TRAINING PROGRAMS

Module 1. Common pathological processes

Semantic module 1.

Introduction. Morphology of injury and death of cells and tissues.

Specific goals:

- To locate pathomorphology as science, branch of applied medicine and a subject, its value for the dentist. To acquire pathomorphology research techniques.*
- To analyze stages of a becoming of a pathomorphology and a contribution of domestic scientists to development of a world pathomorphology.*
- To interpret morphology of stereotypic and specific damages of cellular organelles and to explain cellular and matrix interactions.*
- To explain cellular and extracellular mechanisms of a trophism and reason of their malformations. To explain morphology of reversible and irreversible injuries of cells and tissues.*

- *To interpret morphology of intracellular, extracellular accumulation of proteins, carbohydrates, lipids and accumulation of endogenic and exogenic pigments and their consequence.*
- *To interpret morphology of malformations of mineral metabolism, its consequence.*
- *To interpret morphology, clinical and morphological forms and consequences of a necrosis.*
- *To explain fundamentals of thanatology, to interpret death and its signs.*

Theme 1. Subject and problems of a pathomorphology. Methods of pathomorphologic researches. Main stages of development of a pathomorphology. Injury. Dystrophy. General information.

Pathomorphology is the science which is studying structural (material) bases of diseases for comprehension of fundamental principles of medical science and profound studying of clinical picture of diseases with the subsequent use of the gained knowledge in practical work of the dentist.

Problem of a pathomorphology is studying of pathology of a cell; all-pathological processes; analysis and conclusions of a morphogenesis and morphology of diseases, structural bases of convalescence, complications and consequence.

Morphology is the fundamental and clinical branch of medicine, principle of unity of structure and function, comparison of morphological and clinical manifestation of diseases at all stages of their development.

Methods of pathomorphologic researches are autopsy, biopsy, research of operational material, the experimental model operation.

Characteristic of development of a pathomorphology. A contribution of works of D. Morganyi, K. Rokitsansky, R. Virkhov in development of a world pathomorphology.

Ukrainian pathomorphologic school. E.Kh.Egidi and D.S.Samoylovich's role in establishment of pathological anatomy in Ukraine. A role of works of D.F.Lyambli, V. P. Krylov, M.F.Melnikov-Rozvedenkov, G. E. Zeman, A. I. Strukov, G. L. Derman (The Kharkiv medical school), M. I. Kozlov, Yu.I.Matson, G. M. Minkh, V. K. Vysokovich, M. Konstantinovich, P.O.Kucherenk, E. I. Chaika, O. V. Kiselyov (The Kiev medical school), A. Obzhut, Z.Dmokhovsky, V. Novitsky, Z. Albert, M. V. Voyno-Yasenetsky, E.G.Palchevsky (The Lviv medical school), G. M. Minkh, M. O. Stroganov, Ch. I. Hentsinsky, D. P. Kishensky, M. M. Tiesenhausen, D.M.Khayutin, N. M. Kovrizhko (The Odessa medical school) in development of the Ukrainian pathomorphologic Role of Works school of O. I. Polunin, M. M. Nikiforov, M. O. Skvortsov, O. I. Abrikosov, S. S. Vail, I. V. Davydovsky, M. M. Anichkov, M. F. Glazunov, V. G. Garshin in a becoming of the Russian pathomorphology.

Injury. Dystrophy. General information.

Theme 2. Elements of ultrastructural pathology of a cell. Cellular and matrix interactions. Intracellular and extracellular mechanisms of a regulation of a trophicity.

Cell pathology as integrative concept. Pathology of a cellular core. Mitosis pathology, chromosomal aberrations and chromosomal diseases. Stereotypic damages of metastructures in response to various influences. Pathological changes of cellular

membranes and change of cells at damage of a plasmolemma. Pathological changes of a cytoplasmic reticulum. Pathological changes of a complex of Golgi. Pathological changes of mitochondrions. Pathological changes of lysosomes. Pathological changes of peroxysomas. Pathological changes of a cytoskeleton (microfilaments, microtubules). Cell movement and its role in pathology. Specific changes of metastructures: "diseases" of receptors, lysosomal, mitochondrial, peroxisome "diseases".

Theme 3. Morphology of reversible and irreversible injuries of cells and tissues. The intracellular accumulation of proteins, carbohydrates and lipids.

Intracellular accumulation: definition, mechanisms of development. Varieties: the accumulation of normal cell metabolism products, pathological products (exogenous or endogenous).

Theme 4. Morphology of reversible and irreversible injuries of cells and tissues. Extracellular accumulation of proteins, carbohydrates and lipids.

The extracellular accumulation. Hyaline change. Intracellular and extracellular hyaline: morphogenesis, morphological characteristics. Hyaline changes in various pathological conditions.

Amyloidosis: classification, morphological characteristics.

Theme 5. Morphology of pathological accumulation of endogenous and exogenous pigments. Morphology disorders of mineral metabolism.

Malformation of iron metabolism and metabolic hematogenous pigments. Classification hematogenous pigments. The toxic form of ferritin: causes and consequences of their formation.

Melanin malformation. Morphological characteristics of hypopigmentation (leukoderma, vitiligo, albinism) and hyperpigmentation (general melasma, local melanism, pigmented nevus).

Malformation of nucleoprotein metabolism. Gout and gouty arthritis: morphological characteristics of the changes of the joints, complications, consequences. Gouty nephropathy: morphological characteristics.

Malformation of exchange of minerals and trace substances.

Formation of stones: localization, types of stones, outcomes and complications of a lithogenesis.

Theme 6. Injury and death of cells and tissues. Necrosis and apoptosis. Pathological anatomy of the organ failure. Fundamentals of thanatology. Death: determination, signs of death.

Cell necrosis: definition of terms and phases of development, morphological characteristics of coagulation necrosis and cell lysis, their consequences.

Pathogenicity-induced apoptosis: determination, the molecular mechanisms of life, microscopic manifestations, outcomes.

Immune destruction of cells: morphological manifestations. Phagocytosis: definition, basic-phagocytic cells, microscopic manifestations of phagocytosis.

Pathological anatomy of the organ failure.

The post-ischemia-reperfusion organ injury: definition, features of morphogenesis, morphological characteristics, consequences.

Fundamentals of thanatology - the doctrine of death, its causes, mechanisms and symptoms.

The birth and death of a person. The death of the body with the biological, social and health-care sides: the idea of the natural, violent death and death from diseases (premature and sudden). Determination of fetal death.

Tanatogenesis. Structural mechanisms of the termination of activity of vital organs in the natural progress of the disease. Nearest consequences of termination of the heart, lungs, brain, kidneys and liver.

Biological death: definition, direct causes and timing of the development in the natural course of the disease and the sudden death of a person. The initial and late signs of biological death and the death of a resuscitated patient. Morphological characteristics of cadaveric changes.

Semantic module 2.

Malformation of blood and lymph circulation. Inflammation. Immunological processes. Regeneration, the processes of adaptation and compensation.

Specific objectives:

- To explain the morphological manifestations of disorders of the ion-osmotic and water balance.*
- To explain morphological manifestations and consequences of circulatory disorders: arterial and venous hyperemia, ischemia, bleeding, stasis, plasmorrhages, shock, embolism.*
- To explain morphological manifestations and consequences of lymph circulation disorders.*
- Analyze morphological manifestations and consequences of hemorrhagic syndrome, thrombosis, disseminated intravascular clotting.*
- To analyze the morphological characteristics of species of exudative inflammation.*
- To analyze the morphological features and the effects of proliferative inflammation.*
- To analyze the morphological changes of the immune system organs at their congenital and acquired diseases.*
- To interpret the morphological changes in the reactions of hypersensitivity.*
- To explain the morphological manifestations of autoimmune diseases.*
- To explain the morphological manifestations of primary and secondary immune deficiency.*
- To identify the structural foundations of physiological adaptation and compensation.*
- To explain the morphogenesis, types and morphological characteristic of regenerative processes.*

Theme 7. Circulatory disorders: ischemia, hyperemia, hemorrhage, bleeding, stasis, plasmorrhages. Malformation of lymph circulation.
Hyperemia (redness). Species, morphology.
Bleeding, hemorrhage: forms, clinical and morphological characteristics.

Stasis: morphological characteristics, consequences.

Plasmorrhages: morphological characteristics, consequences.

Morphological manifestations of disorders of lymph circulation.

Theme 8. Malformation of hemostasis. Thrombosis, DIC. Embolism.

Thrombosis, thrombophlebitis and phlebothrombosis - clinical and morphological characteristics, importance and outcome of thrombosis.

The syndrome of disseminated intravascular coagulation. Morphological characteristics, complications (thromboembolic complications syndrome) consequences.

Embolism: types, morphological characteristics.

Theme 9. Shock. Heart attack.

Ischemia, infarction: definition, classification, morphological characteristics.

Shock: classification and pathological manifestations.

Clinical and pathological characteristics and consequences of post-ischemic-reperfusion damage of organs.

Theme 10. Malformations of the ion-osmotic and water balance. Edema.

Malformation of the ion-osmotic and water balance. Hyper- and hypokalaemia: role in tanatogenesis. Malformation of the water balance, hypo- and hypernatremia: tanatogenesis role in intercellular and cellular dehydration. Transudate, edema of cavities, edema of the internal organs (lungs, brain): morphogenesis, morphological characteristics.

Theme 11. General theory of inflammation. Exudative inflammation.

Morphology of exudative inflammation.

General theory of inflammation. The kinetics of the inflammatory response. Phagocytosis (stages), complete and incomplete phagocytosis. Exudative inflammation: serous, fibrinous (croupous, diphtheritic), purulent (phlegmon, abscess, empyema), catarrhal, hemorrhagic, mixed. Morphological characteristics.

Theme 12. Proliferative inflammation.

Specific inflammation. Granulomatosis.

Productive inflammation. Cell cooperation (macrophages, lymphocytes, plasma cells, eosinophils, fibroblasts, and others.). Morphological features, outcomes.

Granulomatous inflammation: morphological characteristics and methods of diagnosis, consequences. Cell kinetics of granulomas. Specific and non-specific granuloma. Granulomatous disease.

Theme 13. Pathology of the immune system. Hypersensitivity reactions and mechanisms. Autoimmune disease. Immunodeficiency states.

Thymus changes in immunogenesis malformations. Age involution and accidental transformation. Congenital diseases of the thymus: hypoplasia, dysplasia, thymomegalia.

The immune response of the organism to the action of the antigen. Immunological tolerance.

Basics of the immune response. The humoral immunity. Cell-mediated immunity. Immunological hypersensitivity: morphological characteristics of reaginic immediate hypersensitivity, antibody mediated hypersensitivity, immunocomplex hypersensitivity; delayed-type hypersensitivity.

Autoimmune disease: clinical and morphological characteristics.

Immunologic failure: a common clinical and morphological characteristics of primary and secondary failure. Immune deficiency syndromes.

Theme 14. The processes of adaptation and compensation.

Regeneration and repair. Sclerosis.

The types of adaptation and compensation of changes: hypertrophy, hyperplasia, atrophy, metaplasia - definition, types, morphological characteristics.

Regeneration: definition, types and biological importance, and the connection with inflammation. Morphogenesis of regeneration process.

Regeneration of certain types of tissues and organs. Regeneration of connective tissue. Granulation tissue: morphological characteristics. Stages and types of wound healing.

Dysregenerative process: morphological characteristics of hyperregenerative and hyporegenerative damaged tissues. Autopsy.

Semantic module 3.

Tumors. Diseases of the blood system.

Specific objectives:

- To interpret modern concepts of carcinogenesis of malignant and benign tumors.*
- To treat precancerous conditions and changes, their essence, morphology.*
- To interpret the general morphologic features of malignant and benign tumors.*
- To interpret a morphogenesis and histogenesis of tumors.*
- To explain the mechanisms and ways of metastasis.*
- To explain the major clinical and morphological manifestations of tumor growth.*
- To analyze the morphological characteristics of benign and malignant tumors of tissues derived from the mesenchyme.*
- To analyze morphological features of tumors of the nervous tissue, the melanin-forming tissue.*
- To explain the morphological peculiarities of tumors of the oral cavity.*
- To interpret the morphological characteristic of anemia due to blood loss, increased roversrawsome and malformation of hematopoiesis.*
- To interpret the morphological characteristic of thrombocytopenia and coagulopathy thrombocytopathy.*
- To interpret the types, stage, clinical-morphological characteristics, complications, medical pathomorphism, age peculiarities, causes of death in acute and chronic leukemia.*
- To interpret the morphological manifestations of neoplastic diseases of lymph nodes (Hodgkin's and non-Hodgkin's lymphoma).*

Theme 15. The general doctrine of tumors.

Risk factors for tumor growth. Influence of geographical areas, environmental factors. Effect of human aging. Heredity: Hereditary tumor syndromes, familial forms of neoplasia syndromes, disorders of DNA repair. Risk factors for tumor growth. Precancerous (pre-cancerous) condition and change their essence, morphology.

Biology of tumor growth. Morphogenesis tumors. Tumor angiogenesis. The progression and heterogeneity of tumors. Features of the cell population in the tumor focus. Nomenclature and classification principles of the tumors. Histogenesis (cytogenesis) and differentiation of tumors. The main properties of the tumor. Features of the structure, parenchyma and stroma of tumors. Types of tumor growth: an expansive, infiltrative and apposition: exophytic and endophytic. Важнейшие клинико-патологические проявления опухолевого роста.

Characteristics of the tumor process. Local tumor effect. Metastasis: types, patterns, mechanisms. The metastatic cascade.

Malformation of hemostasis body. Secondary changes in the tumor. Cancer cachexia, paraneoplastic syndromes.

Role in cancer biopsy diagnosis.

Stages of carcinogenesis. Carcinogenic agents and their interaction with cells. The most important group of chemical carcinogens. The radiation carcinogenesis. Viral carcinogenesis. Clinical and morphological manifestations.

The anti-tumor immunity. Tumor antigens. The immune surveillance. Antitumor effector mechanisms (cellular and humoral).

Dysplasia: stages, morphological characteristics of dysplasia stages, the clinical significance, role in carcinogenesis.

Benign and malignant tumors: species characteristic.

Theme 16. Nomenclature and morphological features of tumors of the epithelium. Organ-epithelial tumors.

Epithelial tumors without specific localization of benign (papilloma, adenoma) or malignant (cancer). Histological variants of cancer. Features of metastasis.

Tumors of exo- and endocrine glands, as well as epithelial cover.

Gastric tumor.

Tumors of the lungs.

Breast tumors.

Theme 17. The morphological features of the tumor tissue, derived from mesenchyme.

General characteristics of tumors originating from the mesenchyme. Benign tumors of the tissue derived from mesenchyme. Malignant tumors of mesenchyme.

Theme 18. Nomenclature and morphological features of tumors of the nervous tissue. Features of tumors of the central nervous system. Nomenclature and characteristics of tumors occurring a melanin-forming tissues.

Tumors of the central nervous system: neuroectodermal (astrocytic, oligodendroglial, ependymal tumors of choroidepithelium, neuronal, and low differentiated, embryonic), meningovascular tumors. Their morphological characteristics and features of metastasis.

Tumors of the autonomic nervous system. Tumors of the peripheral nervous system.

Meaning of precancerous changes.

Nevi, their varieties. Melanoma, its clinical and morphological forms.

Theme 19. Anemia. Thrombocytopenia and thrombocytopathy. Coagulopathy.

Anemia: clinical and morphological characteristics.

Thrombocytopenia and coagulopathy thrombocytopathy: clinical and morphological characteristics.

Theme 20. Acute and chronic leukemias. Lymphomas.

Leukemia - the primary tumor lesion of the bone marrow. Classification, general clinical and morphological characteristics. Cytogenetic and cytochemical methods of differentiation of cell variants of leukemia.

Reactive lymph node status (histiocytosis, angiofollicular hyperplasia of the lymph nodes).

Hodgkin's disease (Hodgkin's disease): histopathological types, morphological characteristics and methods of diagnosis, the cause of death.

Non-Hodgkin's lymphoma. Tumors with T- and B-lymphocytes: types, morphological characteristics, options immunophenotypic, cytogenetic and molecular genetic markers, the cause of death.

**EXAMPLE STRUCTURE TEST CREDIT - MODULE 1:
General pathological processes.**

Theme	Lectures	Practical lessons	SCWS	In
1. Subject and tasks Pathomorphology. Methods for pathological studies. The main stages of development of pathomorphology. Damage. Dystrophy. General information.	2	2	1	
2. Ultrastructural pathology elements. The cell-matrix interactions. Cellular and extracellular mechanisms of regulation of the trophism.	-	-	2	
3. Morphology of reversible and irreversible damage to cells and tissues. The intracellular accumulation of proteins, carbohydrates and lipids.	-	2	1	
4. Morphology of reversible and irreversible damage to cells and tissues. Extracellular accumulation of proteins, carbohydrates and lipids.	-	2	1	
5. Morphology pathological accumulation of endogenous and exogenous pigments. Morphology disorders of mineral metabolism.	-	2	1	
6. Damage and death of cells and tissues. Necrosis and apoptosis. Pathological anatomy of the organ failure. Fundamentals of thanatology. Death, determination, signs of	2	2	1	

death.				
7. Circulatory disorders: redness, bleeding, stasis, plasmorrhages. Malformation of lymph circulation.	1	2	1	
8. Malformation of hemostasis. Thrombosis. DIC. Embolism.	1	2	1	
9. Ischemia. Shock. Heart attack.	-	2	-	
10. Malformation of the ion-osmotic and water balance. Edema.	-	-	2	
11. General theory of inflammation. Exudative inflammation. Morphology of exudative inflammation.	2	2	1	
12. Proliferative inflammation. Specific inflammation. Granulomatosis.	-	2	-	
13. The morphology of the immune system. Hypersensitivity reactions and mechanisms. Autoimmune disease. Immunodeficiency states.	-	2	1	
14. The processes of adaptation and compensation. Regeneration and reparation. Sclerosis. Autopsy.	-	2	-	
15. The General doctrine about tumors.	2	2	1	
16. Nomenclature and morphological features of tumors from epithelium. Epithelial tumors of the individual organs.	-	2	1	
17. Morphological features of tumors from tissues originating from the mesenchyme.	-	2	1	
18. Nomenclature and morphological features of tumors of the nervous tissue. Features of tumors of the Central nervous system. Nomenclature and features of tumors derived from melanin-forming tissue.	-	2	1	
19. Anemia. Thrombocytopenia and thrombocytopathy. Coagulopathy.	-	2	1	
20. Acute and chronic leukemias and lymphomas.	-	2	1	
The final test control of mastering of module 1 - "Common pathological processes"	-	2	6	
Total hours – 75	10	40	25	
Credits ECTS - 3 , 0				

Note: Classroom loading - 66,7%, SCWS- 33, 3%

Thematic plan of lectures

№	THEME OF THE LECTURE	the number of hours
1.	The subject and problems of pathomorphology. Methods of pathological research. The main stages of development of pathomorphology. Injury. Dystrophy.	2
2.	Injury and death of cells and tissues. Necrosis and apoptosis. Pathological anatomy of organ failure.	2

3.	Disorders of blood circulation and lymph circulation.	2
4.	The general doctrine of inflammation. Exudative and productive inflammation. Morphology of exudative and productive inflammation.	2
5.	The general doctrine about tumors. Morphological features of tumors from tissues originating from the mesenchyme, epithelium, nervous tissue	2
	TOTAL	10

**Thematic plan of practical classes
at the Department №2 of pathological anatomy**

№	THEME OF PRACTICAL LESSONS	the number of hours
1.	The subject and problems of pathomorphology. Methods of pathological research. The main stages of development of pathomorphology. Injury. Dystrophy. General information.	2
2.	Morphology of reversible and irreversible injury of cells and tissues. Intracellular accumulation of proteins, carbohydrates and lipids.	2
3.	Morphology reversible and irreversible damage of cells and tissues. Extracellular accumulation of proteins, carbohydrates and lipids.	2
4.	Morphology of pathological accumulation of endogenous and exogenous pigments. Morphology disorders of mineral metabolism.	2
5.	Injury and death of cells and tissues. Necrosis and apoptosis. Pathological anatomy of organ failure. Bases of thanatology. Death, definition, signs of death.	2
6.	Circulatory disorders: ischemia, hyperemia, bleeding, hemorrhage, stasis, plasmorrhage. Violation of lymph circulation.	2
7.	Violation of hemostasis. Thrombosis, DIC-syndrome. Embolism. Shock. A heart attack	2
8.	Practical skills №1	2
9.	The general doctrine of inflammation. Exudative inflammation. Morphology of exudative inflammation.	2
10.	Proliferative inflammation.	2
11.	Pathomorphology of the immune system. Reactions and mechanisms of hypersensitivity. Autoimmune disease. Immunodeficiency conditions.	2
12.	The processes of adaptation and compensation. Regeneration and reparation. Sclerosis.	2
13.	The general doctrine about tumors. Nomenclature and morphological features of tumors from epithelium.	2

14.	Organ-specific epithelial tumors.	2
15.	Morphological features of tumors from tissues originating from the mesenchyme.	2
16.	Nomenclature and morphological features of tumors of the nervous tissue. Features of tumors of the central nervous system. Nomenclature and morphological features of tumors derived from melanin-forming tissue.	2
17.	Anemia. Thrombocytopenia, thrombocytopathy. Coagulopathy.	2
18.	Leukemias and lymphomas.	2
19.	Practical skills №2. Premodule testing	2
20.	Total modular control	2
	TOTAL	40

Thematic plan of lectures

№	THEME OF LECTURES	the number of hours
1.	The subject and problems of pathomorphology. Methods of pathological research. The main stages of development of pathomorphology. Injury. Dystrophy.	2
2.	Injury and death of cells and tissues. Necrosis and apoptosis. Pathological anatomy of organ failure.	2
3.	Disorders of blood circulation and lymph circulation.	2
4.	The general doctrine of inflammation. Exudative and productive inflammation. Morphology of exudative and productive inflammation.	2
5.	The General doctrine about tumors. Morphological features of tumors from tissues originating from the mesenchyme, epithelium, nervous tissue.	2
	TOTAL	10

Types of self-contained work of students and its control

№	THEME	Control	the number of hours
1.	The general doctrine about illness, etiology and pathogenesis		1
2.	The elements of the ultrastructural pathology of the cell. Cell-matrix interaction. Cellular and extracellular regulation mechanisms of the trophic		1
3.	The depletion of the body. The decrease in the content of lipids in adipose tissue		1
4.	Pathogenetically induced apoptosis		1
5.	Postischemic reperfusion injury microstructures of multiple organs		1
6.	Amniotic embolism		1

7.	Alteration		1
8.	Granulomas of unknown etiology (sarcoidosis, Crohn's disease, Wegener's granulomatosis).		2
9.	Molecular pathological basis of immune response.		2
10.	Metaplasia		2
11.	The theory of oncomorphogenesis		2
12.	Tumors of childhood		2
13.	Pathomorphology of colloid tumor		2
14.	Pathomorphology of the APUD		1
15.	Erythro sedimentation		1
16.	Multiple myeloma		1
17.	Syndrome of Sezari		1
18.	Hodgkin's disease		1
19.	Burkitt's Lymphoma		1
	Total		25

THE DISTRIBUTION OF POINTS AWARDED TO STUDENTS

№ of classes in order	Module 1 (Current educational activities)	the number of hours
	<i>Semantic module 1</i>	3 0
1.	Theme 1	6
2.	Theme 3	6
3.	Theme 4	6
4.	Theme 5	6
5.	Theme 6	6
	<i>Semantic module 2</i>	4 2
6.	Theme 7	6
7.	Theme 8	6
8.	Theme 9	6
9.	Theme 11	6
10.	Theme 12	6
11.	Theme 13	6
12.	Theme 14	6
	<i>Semantic module 3</i>	4 2
13.	Theme 15	6
14.	Theme 16	6
15.	Theme 17	6
16.	Theme 18	6
17.	Theme 19	6
18.	Theme 2 0	6
19.	Theme 2 1	6
<i>Together semantic modules</i>		1 1 4
<i>Individual SCWS (incentive points)</i>		6

<i>Final control of learning of module 1:</i>	
<i>Test control of theoretical training</i>	<i>70</i>
<i>Control of practical training</i>	<i>10</i>
TOTAL amount of points	200

Note: While mastering the theme on traditional system, the student is given a score: "5" - 6 points "4" - 5 points, 3 is 3 points, "2" - 0 points. The number of points that are scored the student on the discipline, may be added 6 incentive points for publishing scientific papers, receiving prizes in competitions on the profile of discipline.

The maximum number of points for current educational activity of students - 114. The number of points that are scored the student on the discipline, may be added 6 incentive points for publishing scientific papers, receiving prizes in competitions on the profile of discipline.

The student is allowed to the total modular control under condition of performance of requirements of the curriculum and if for current educational activity he scored at least points of 57 (19 x 3).

Total module control is enrolled the student if he scored at least 50 points out of 80 points .

Module 2. Special pathomorphology

Semantic module 4.

Diseases of the cardiovascular system. Diseases of the nervous system

Specific goals:

- To interpret the morphological description, stages of atherosclerosis and organ lesions.*
- To interpret the morphological and functional changes in myocardium in acute and chronic forms of coronary heart disease, as well as the consequences, complications, causes of death.*
- To interpret the clinical and morphological characteristic, complications, causes of death in essential hypertension (hypertensive disease) and secondary (symptomatic) hypertension.*
- To determine morphological changes, complications and consequences of rheumatic diseases and vasculitis.*
- To analyze morphological changes, complications and consequences of endomyocarditis of different genesis.*
- To interpret morphological types of acquired and congenital heart diseases, their complications and causes of death.*
- Interpret the concept of cerebrovascular disease, risk factors and morphological manifestations of ischemic, hemorrhagic and mixed brain stroke.*
- To interpret morphological changes in Alzheimer's disease, demyelinating diseases (multiple sclerosis) and in lateral amyotrophic sclerosis.*
- To interpret the morphological changes in postresuscitation encephalopathy.*

□ *To interpret morphological changes in infectious diseases of the central nervous system.*

Theme 22 . Atherosclerosis. Coronary heart disease.

Atherosclerosis: overview (epidemiology, risk factors). Morphological characteristic and atherosclerosis stages, a structure of an atherosclerotic plaque. Organ lesions in atherosclerosis.

Coronary heart disease. Angina: classification, clinical-morphological characteristics. Myocardial infarction: causes, classification, dynamics of morphological and functional changes in myocardium. Outcomes, complications, causes of death. Chronic ischemic heart disease: clinical-morphological characteristic, complications, causes of death.

Theme of 23 . Hypertensive disease and symptomatic hypertension. Cerebrovascular disease.

Essential hypertension (hypertensive disease) and secondary (symptomatic) hypertension. Benign and malignant hypertension. Hypertensive disease: risk factors, morphological changes in vessels, heart, kidneys and other organs.

Cerebrovascular disease: definition, risk factors, classification, background diseases. Infarction (ischemic stroke) brain. Classification and morphological characteristics, outcomes. Selective necrosis of neurons (ischemic encephalopathy): morphological characteristics. Hemorrhagic stroke, intracerebral hemorrhage, subarachnoid hemorrhage: morphological characteristics, complications, consequences.

Theme 24 . Systemic connective tissue disease.

Rheumatism: classification and morphogenesis, morphological characteristics.

Rheumatoid arthritis. Morphogenesis, morphology of articular manifestations (stages of progression of rheumatoid arthritis, complications and consequences).

Pathology of ankylosing spondylitis.

Systemic lupus erythematosus: pathological anatomy, immunomorphological changes in the skin, blood vessels, heart, kidneys. Complications, causes of death.

Systemic scleroderma: pathological anatomy, visceral manifestations of systemic scleroderma. Complications, causes of death.

Dermatomyositis: pathological anatomy, clinical and anatomical forms. Complications, causes of death.

Theme 25. Systemic vasculitis.

Inflammation of the vessels - vasculitis. Classification. The main noninfectious vasculitis: nodular periarteritis, arteritis Takayasu, temporal arteritis, Wegener's granulomatosis, obliterating thromboangiitis (Vinivarter-Burger disease), Kawasaki disease: morphological characteristics. Vasculitis of other groups (purpura Shenlaine-Genoch, rheumatoid vasculitis). Raynaud's disease: clinical and morphological characteristics.

Theme 26 .Diseases of the nervous system.

Alzheimer's disease: a morphological characteristic.

Demyelinating diseases. Classification. Multiple sclerosis: a morphological characteristic.

Amyotrophic lateral sclerosis: morphological characteristics.

Postresuscitative encephalopathies: pathological anatomy and evolution of mosaic-focal anoxic lesions of the brain and spinal cord. Features of morphogenesis and pathoanatomical diagnostics.

Diseases of peripheral nerves and paraganglia. Damage to the peripheral nerves. Degenerative changes in the peripheral nerves. Peripheral neuropathies. Diabetic, uremic and other forms of neuropathy.

Semantic module 5.

Diseases of the respiratory system. Diseases of the digestive system.

Specific goals:

- Treat morphogenesis, clinical and morphological manifestations, complications, consequences of acute and chronic diseases of the upper respiratory tract.*
- Treat the morphological features of malignant tumors of the bronchi and lungs, the ways of their metastasis.*
- Treat varieties and clinical and morphological manifestations, complications and consequences of diseases of the esophagus, stomach and intestines.*
- Treat classification, macroscopic and histological forms, features of gastric cancer metastasis.*
- Treat clinical and morphological characteristics, the effects of peritonitis, primary and secondary tumors of the peritoneum.*
- Treat pathological anatomy of liver diseases.*
- Treat morphological and functional manifestations of cholelithiasis, acute and chronic cholecystitis, acute and chronic pancreatitis.*

Theme 27. Diseases of the respiratory system.

Acute bronchitis: pathological anatomy. Acute bronchiolitis (primary, follicular, obliterating): pathological anatomy. Complications.

Acute inflammatory lung diseases. General characteristics, modern classification of pneumonia. Clinical and morphological features, stages of development, complications, consequences.

Chronic nonspecific lung diseases: chronic obstructive bronchitis, chronic obstructive emphysema, bronchiectasis and bronchiectasis, bronchial asthma, diffuse chronic lesions. Definition, classification, morphogenesis, morphological characteristics, complications, consequences.

Tumors of bronchi and lungs.

Theme 28. Diseases of the esophagus, stomach and intestines.

Diseases of the esophagus: a morphological characteristic

Chronic gastritis and peptic ulcer: clinical and morphological characteristics, complications, consequences.

Tumors of the esophagus and stomach.

Enterocolitis: clinical and morphological characteristics, complications.

Tumors of the small and large intestine, morphological characteristics.

Appendicitis. Classification. Morphological characteristics of manifestations of acute and chronic appendicitis. Complications.

Theme 29. Diseases of the liver, bile duct system and pancreas. The autopsy.

Steatosis: clinical and morphological characteristics, complications.

Toxic hepatic dystrophy: pathological anatomy, complications.

Acute and chronic hepatitis: classification, morphogenesis, morphological characteristics, consequences, prognosis.

Alcoholic liver damage: morphogenesis, morphological characteristics, complications and causes of death.

Cirrhosis of the liver. Morphological features, morphological classification, morphological characteristics of the most important types of cirrhosis.

Tumors of the liver.

Cholelithiasis: types of stones. Acute and chronic cholecystitis: morphological description, complications, causes of death.

Pancreatitis acute and chronic: morphological characteristics, complications and causes of death.

Pancreatic cancer: morphological characteristics.

Semantic module 6.

Diseases of the endocrine system. Diseases of the genitourinary system. Diseases of pregnancy and the postpartum period. Pathological conditions head as a consequence of pre - and perinatal pathology.

Specific goals:

- To interpret causes, clinical and morphological displays of syndromes associated with dysfunction of the pituitary gland.*
- To interpret the clinical and morphological manifestations, complications and causes of death in diabetes.*
- To interpret a morphogenesis and morphological manifestations of diseases of thyroid and parathyroid.*
- To interpret the clinical and morphological manifestations of diseases of the adrenal glands.*
- To interpret the clinical and morphological manifestations of diseases of the pineal body of the brain.*
- To interpret the morphological manifestations of diseases of female genital organs and breast cancer.*
- To interpret the morphological manifestations of diseases of male genital organs.*
- To interpret the modern clinical-morphological classification, morphological manifestations of diseases of the kidneys.*
- To interpret the morphological manifestations, complications and consequences of abortions, ectopic pregnancy, ORN-gestoses and trophoblastic disease.*
- To explain the clinical and morphological manifestations, prognosis of maternity trauma and maternity injury.*
- To explain the clinical and morphological manifestations of pathological course of pregnancy.*
- To interpret the clinical and morphological manifestations of diseases of infants.*

□ *To interpret the clinical and morphological manifestations of intrauterine infections, fetopathy and congenital malformations.*

Theme30. Diseases of the endocrine system.

Diseases of the pituitary: clinical and morphological characteristics.

Diabetes. Morphological characteristics of diabetes. Complications of diabetes (diabetic angiopathy, nephropathy, retinopathy, neuropathy): clinical and morphological characteristics, prognosis. The cause of death in diabetes.

Thyroid diseases: classification, morphological characteristics.

Diseases of the parathyroid glands: morphological characteristics.

Diseases of the adrenals: morphological characteristics.

Diseases of the pineal gland pathological anatomy.

Theme31. Kidney diseases.

Glomerular diseases of kidneys. Glomerulonephritis: classification, morphological characteristics, consequences.

Idiopathic nephrotic syndrome, membranous nephropathy, focal glomerulosclerosis: a morphological characterization.

Acute tubular necrosis: morphological characteristics.

Tubulointerstitial nephritis: morphological characteristics, outcomes.

Acute and chronic pyelonephritis: morphological characteristics, complications.

The nephrolithiasis. Morphogenesis, morphological characteristics, consequences.

Hydronephrosis. Morphogenesis, morphological characteristics, consequences.

Cystic kidney disease: morphological characteristics.

Renal amyloidosis: morphological characteristics, outcomes.

Chronic renal insufficiency: pathological anatomy.

Theme32. Diseases of female and male reproductive system.

Disease of uterine cervix: classification, clinical and morphological characteristics.

Diseases of body of uterus and endometrium: morphological characteristics.

Of breast diseases: classification, clinical and morphological characteristics.

Diseases of male genital organs: morphological characteristics, complications, consequences.

Theme33. Pathological conditions of head as a consequence of pre - and perinatal pathology.

Birth injury: classification, morphological characteristics.

Intrauterine infections: morphological manifestations.

Morphology of noninfectious fetopathy.

Congenital malformations: morphological characteristics.

Tema 3 4 . Parathyroid osteodystrophy, osteoporosis, Paget's disease, fibrous dysplasia, osteomyelitis, joint disease, muscular dystrophy, myasthenia gravis.

Hyperparathyroidism: morphological bone changes.

Paget's disease: morphological characteristics, complications.
Fibrous dysplasia: morphological characteristics, complications.
Osteomyelitis: morphological characteristics, complications, consequences.
Duchenne muscular dystrophy: pathogenesis, morphological characteristics, causes of death.
The myotonia: definition, pathogenesis, clinical and morphological characteristics.
Congenital myopathy. The classification, clinical and morphological characteristics.
Toxic myopathies: Clinical and morphological characteristics.
The lesion of the neuromuscular junction. Myasthenia gravis (myasthenia gravis): morphological characteristics.

Theme35 .Pathomorphological changes in diseases associated with nutrition.

Radiation sickness, occupational diseases, hospital illness, etc.

Disease related to nutrition: morphological characteristics. Occupational diseases caused by exposure to chemical industrial factors, dust (pneumoconiosis): classification, pathologic anatomy.

Damage, associated with changes in atmospheric pressure. Altitude sickness. Contusion. An air embolism. Diseases related to nutrition: a morphological characteristic. Occupational diseases caused by exposure to chemical production factors, dust (pneumoconiosis): classification, pathological anatomy. Damage due to changes in atmospheric pressure. Altitude sickness. Contusion. Air embolism. Decompression, or caisson disease. Pathological anatomy. Outcomes. Causes of death. Diseases due to industrial noise. Pathological anatomy and consequences. Pathological anatomy. Outcomes. The cause of death.

Diseases caused by industrial noise. Pathological anatomy and consequences.

Illness due to exposure to electromagnetic waves of radio frequencies. Pathological anatomy. The cause of death.

Damage from temperature effects. Burns (deep and superficial). Heat stroke: clinical and morphological characteristics. Hypothermic damage.

Damage caused by electric shock: clinical and morphological characteristics. The cause of death.

Illness due to exposure to ionizing radiation (radiation sickness). Pathological anatomy of acute and chronic radiation sickness. The cause of death.

Iatrogenic drug pathology, morphological characteristics.

Semantic module 7.

Pathology of the dentoalveolar system and organs of the oral cavity.

Specific goals:

- Treat the causes, clinical and morphological manifestations of caries and not carious lesions of hard tooth tissues.*
- Treat clinical and morphological manifestations of reactive changes in pulp, pulpitis, periodontitis.*
- Treat morphogenesis and morphological manifestations of gingivitis, periodontitis, parodontosis, idiomatic progressing parodontolysis.*
- Distinguish between tooth deposits.*
- Treat clinical and morphological manifestations of jaw diseases.*

- *Treat clinical and morphological manifestations of salivary gland diseases.*
- *Treat clinical and morphological manifestations of diseases of the lips, tongue, soft tissues of the oral cavity.*
- *Treat clinical and morphological characteristics of tumors and tumor-like diseases of the oral cavity.*

Theme36. Diseases of hard tissues of tooth, pulp and Periapical dental tissues.

Pathological anatomy of caries. Clinical and morphological stages of caries.
 Non-carious lesions of hard tooth tissues.
 Clinical and morphological characteristics of pathological states of pulp and periapical dental tissues.
 Clinical and morphological characteristics of reactive changes in pulp.
 Clinical and morphological characteristics of acute and chronic pulpitis.
 Periodontitis. Morphogenesis and morphological manifestations of periodontitis.

Theme37. Diseases of gums and periodontium

Pathological anatomy of gingivitis. Morphological forms of gingivitis.
 Tooth deposits.
 Pathological anatomy of periodontitis.
 Parodontosis, morphogenesis and morphological manifestations.
 Idiopathic progressive periodontitis.

Theme38. Diseases of jaws, salivary glands, lips, tongue, soft tissues of the oral cavity. Autopsy.

Inflammatory diseases of the jaws. Morphological manifestations.
 Complications and consequences.
 Cysts of the jaw bones.
 Diseases of the salivary glands. Sialadenitis. Salivary stone disease. Cysts of the salivary glands.
 Diseases of the lips, tongue, soft tissues of the oral cavity. Cheilitis. Glossitis. Stomatitis.

Theme39. Tumors and tumoral diseases of the oral cavity.

Periodontal disease.
 Tumor diseases of jaws.
 Neodontogenic and odontogenic tumors of jaw bones.
 Tumors and tumorous diseases of the salivary glands.
 Tumors and swelling similar diseases of the lips, tongue, soft tissues of the oral cavity.

***Semantic module 8.
Morphology of the infectious process.***

Specific goals:

- *To interpret the general characteristic of infectious process: the entrance gate of infection, primary infectious complex, spreading and dissemination, ways of transmission of infectious diseases.*
- *To interpret the morphogenesis, clinical and morphological manifestations, consequences, causes of death intestinal infectious diseases.*
- *To interpret the morphogenesis, clinical and morphological manifestations, consequences, causes of death in viral diseases, rickettsiosis.*
- *To interpret the morphogenesis, clinical and morphological manifestations, consequences, reasons of death at infectious diseases mainly in child age.*
- *To analyze the morphology of tissue reactions, constituents of primary tubercular complex.*
- *To interpret the clinical and morphological manifestations and complications of primary, hematogenous and secondary tuberculosis.*
- *To interpret the clinical and morphological manifestations of sepsis: septicemia, pyosepticemia, septic (infectious) endocarditis.*
- *To interpret the morphogenesis, clinical and morphological manifestations, consequences, causes of death in plague, tularemia, anthrax, cholera.*
- *To interpret the morphogenesis, clinical and morphological manifestations, consequences, causes of death in diseases, pathogens which are protozoa, helminths: malaria, amoebiasis, echinococcosis, cysticercosis, opisthorchiasis, schistosomiasis.*
- *To interpret the morphogenesis, clinical and morphological manifestations, consequences, causes of death in the athlete.*

Theme40. Infectious and parasitic diseases. Characterization of the infectious process. Intestinal infectious diseases.

General characteristic of infectious process: the entrance gate of infection, primary infectious complex, spreading and dissemination, ways of transmission of infectious diseases. Morphological variants of local and general reactions in infections with participation of neutrophils (purulent inflammation), with the participation of lymphocytes and macrophages (mononuclear infiltration and granulomatous inflammation) under the action of viruses (cytopathic) with a predominance of necrotizing local reaction.

Typhoid fever and salmonellosis: morphogenesis, morphological description, complications, consequences, reasons of death.

The shigellosis: morphogenesis, morphological characteristics, complications, consequences, reasons of death.

Viral enteritis and diarrhea. Campylobacter, Yersinia, staph and coli - enteritis.

Theme41. Viral respiratory infection. HIV infection. Rabies. Riccetsios. Prion infections. Children's infections.

Viral (rhinovirus, influenza) infections: clinical and morphological manifestations.

HIV infection, acquired immunodeficiency syndrome (AIDS): morphogenesis, clinical and morphological characteristics. AIDS Associated diseases: opportunistic infections, tumors. Complications, causes of death.

Rickettsiosis: rash epidemic and sporadic typhus, recurrent typhus. Morphological characteristics.

Rabies: morphological characteristics, causes of death.

Slow viral neuroinfections and prion diseases (Kuru, Creutzfeldt-Jakob disease, prion diseases of animals): morphological characteristics.

Measles, mumps, infectious mononucleosis, poliomyelitis, chicken pox, whooping cough, diphtheria, scarlet fever, meningococcal infection: morphogenesis, morphological characteristics, complications, causes of death.

Theme42. Tuberculosis. Syphilis.

Morphology of tissue reactions in tuberculosis. Modern morphological classification of tuberculosis. Primary tuberculosis complex: morphological characteristics. Progression of primary tuberculosis with generalization of the process: morphological characteristics. Chronic course of primary tuberculosis: a morphological characteristic. Hematogenous tuberculosis (generalized, with predominant lung involvement, with primary lesion of internal organs): morphological characteristics.

Secondary tuberculosis. Morphological characteristics, complications, consequences, causes of death. Modern pathomorphology of tuberculosis.

Primary and secondary syphilis. Morphology of visceral syphilis. Morphology of congenital syphilis: syphilis of stillborn preterm, early congenital syphilis of newborns and infants, late congenital syphilis of preschool and school age children.

Theme43. Sepsis. Quarantine infection.

Sepsis as a special form of infection. Differences from other infections. Concept about a septic hearth, and the entrance gate (classification, morphology). Clinical and anatomical forms of sepsis (septicemia, pyosepticemia, septic (infectious) endocarditis): morphological characteristics.

Plague, tularemia, anthrax, cholera: pathology is a clinical and morphological forms, complications, causes of death.

Theme44. Diseases, pathogens which are protozoa, helminthes. Mycoses.

Malaria, balantidiasis amoebiasis: morphogenesis, morphological characteristics, complications, outcomes.

Trichinosis, echinococcosis, cysticercosis, opisthorchiasis, schistosomiasis: morphogenesis, morphological characteristics, complications, consequences.

Mycoses pathologic anatomy, complications, consequences for ringworm. Pathological anatomy, complications, outcomes of visceral mycoses (actinomycosis, candidiasis, aspergillosis).

APPROXIMATE STRUCTURE TEST CREDIT - MODULE 2:

Special pathomorphology.

Theme	Lectures	Practical lessons	SCWS	Individual SCWS
<i>Semantic module 4. Diseases of the cardiovascular system.</i>				
<i>Diseases of the nervous system</i>				
22. Atherosclerosis. Coronary heart disease.	1	3	1	-
23. Hypertensive disease and symptomatic hypertension.	1	3	1	-

Cerebrovascular pathology .				
24. Systemic connective tissue disease.	-	3	-	-
25. Systemic vasculitis.	-	-	2	-
26. Diseases of the nervous system.	-	-	2	-
<i>Semantic module 5. Diseases of the respiratory system. Diseases of the digestive system.</i>				
27. Diseases of the respiratory system.	-	3	1	-
28. Diseases of the esophagus, stomach and intestines.	2	3	1	-
29. Diseases of the liver, biliary system and pancreas. Autopsy.	-	3	1	-
<i>Semantic module 6. Diseases of the endocrine system. Diseases of the genitourinary system. Diseases of pregnancy and the postpartum period. Pathological conditions head as a consequence of pre - and perinatal pathology.</i>				
30. Diseases of the endocrine system.	-	3	1	-
31. Kidney disease.	-	3	1	-
32. Diseases of female and male reproductive system. Diseases of pregnancy and the postpartum period	-	3	-	-
33. Pathological conditions of head as a consequence of pre - and perinatal pathology.	-	3	-	-
34. Parathyroid osteodystrophy, osteomyelitis, fibrous dysplasia, osteoporosis, Paget's disease, muscular dystrophy, myasthenia gravis.	-	-	2	-
35. Morphological changes of diseases related to food. Radiation sickness, occupational illness, sick leave, illness, etc.	-	-	2	-
<i>Semantic module 7. Pathology of dental system and organs of the oral cavity.</i>				
36. Diseases of hard tissues of the tooth, pulp and periapical tissues of the tooth .	2	2	2	-
37. Diseases of gums and periodontium	-	1	-	-
38. Diseases of jaws, salivary glands, lips, tongue, soft tissues of the oral cavity. Autopsy.	-	3	1	-
39. Tumors and tumor-like diseases of the oral cavity.	2	3	1	-
<i>Semantic module 8. Pathomorphology of infectious diseases.</i>				
40. Infectious and parasitic diseases. Characterization of the infectious process. Intestinal infectious diseases.	-	3	1	-
41. Viral respiratory infection. HIV infection. Rabies. Riccetsios. Prion	-	2	1	-

infections. Children's infections.				
42. Tuberculosis. Syphilis.	-	2	1	-
43. Sepsis. Quarantine infection.	-	2	-	-
44. Diseases, pathogens which are protozoa, helminthes. Mycoses.	-	-	2	-
The final test control of mastering of module 2 - "Special pathomorphology"	-	2	6	-
Total hours – 90	10	50	30	-
Credits ECTS - 4,0				

Note: Classroom loading - 66,7%, SCWS- 33, 3%

Thematic plan of lectures

№	THEME OF THE LECTURE	the number of hours
6.	Cardiovascular pathology.	2
7.	Diseases of the digestive system. Liver pathology	2
8 .	Diseases of the maxillo dental system and oral cavity.	2
9.	Tumors of the dentition and oral cavity.	2
10.	Sepsis. Tuberculosis	2
	TOTAL	10

Thematic plan of practical classes at the Department №2 of pathological anatomy

№	THEME OF PRACTICAL LESSONS	the number of hours
1.	Atherosclerosis. Hypertensive disease and symptomatic hypertension.	3
2.	Coronary heart disease. Cerebrovascular pathology.	3
3.	Systemic connective tissue diseases.	3
4.	Diseases of the respiratory system.	3
5.	The final lesson: <i>Semantic module №1</i>	3
6.	Diseases of the esophagus, stomach and intestines.	3
7.	Diseases of the liver, biliary system and pancreas.	3
8.	Diseases of the endocrine system.	3
9.	Kidney disease.	3
10.	Diseases of female and male reproductive system. Diseases of pregnancy and the postpartum period.	3
11.	The final lesson: <i>Semantic module №2</i>	3
12.	Inflammatory diseases of the maxillo dental system and oral cavity.	3
13.	Tumors of the maxillo dental system and oral cavity	3
14.	Infectious diseases. Intestinal bacterial infection. Sepsis.	3
15.	Tuberculosis. Syphilis.	3
16.	The viral infection. HIV infection.	3

17.	Total modular control	3
	TOTAL	50

Types of self-contained work of students and its control

№	THEME	Control	the number of hours
1.	Parathyroid osteodystrophy, osteopetrosis, Paget's disease, fibrous osteodysplasia, osteomyelitis, joint disease, muscular dystrophy, myasthenia gravis	TMC	1
2.	Cerebrovascular disease. Diseases of the nervous system	“-”	2
3.	Vasculitis	“-”	2
4.	Enzymopathy	“-”	2
5.	Respiratory distress syndrome in adults	“-”	2
6.	Symptomatic ulcers	“-”	1
7.	Syndrome of portal hypertension	“-”	2
8.	Addison's Disease	“-”	2
9.	Diabetic and hepatic glomerulosclerosis	“-”	2
10.	Alzheimer's Disease. Demyelinating disease. Multiple sclerosis. Amyotrophic lateral sclerosis. Postresuscitation encephalopathy. Diseases of the peripheral nervous system.	“-”	2
11.	Pathological conditions head as a consequence of pre - and perinatal pathology.	“-”	2
12.	Pre - and perinatal pathology.	“-”	1
13.	Pathological changes of the diseases related to nutrition. Radiation sickness, occupational illness, hospital diseases.	“-”	2
14.	Diseases, pathogens which are protozoa, helminthes. Mycoses	“-”	2
15.	Rabies. Riccetsios. Prion infections.	“-”	1
16.	Disease, which is caused by the Ebola virus	“-”	2
	TOTAL		30

THE DISTRIBUTION OF POINTS AWARDED TO STUDENTS

№ of classes in order	Module2 (Current educational activities)	the number of hours
	Semantic module 4	21
21	Theme 22	7
22	Theme 23	7
23	Theme 24	7
	Semantic module 5	21
24	Theme 26	7

25	Theme 27	7
26	Theme 28	7
	Semantic module 6	28
27	Theme 30	7
28	Theme 31	7
29	Theme 32	7
30	Theme 33	7
	Semantic module 7	28
31	Theme 36	7
32	Theme 37	7
33	Theme 38	7
	Semantic module 8	28
34	Theme 40	7
35	Theme 41	7
36	Theme 42	7
Together semantic modules		112
Individual SCWS (incentive points)		8
Final control of learning of module 1:		
Test control of theoretical training		70
Control of practical training		10
TOTAL amount of points		200

Note: While mastering the theme on traditional system, the student is given a score: "5" - 7 points "4" - 5 points, «3»- 3 points, "2" - 0 points. The number of points that are scored the student on the discipline, may be added 8 incentive points for publishing scientific papers, receiving prizes in competitions on the profile of discipline.

The maximum number of points for current educational activity of students – 112.

The student is allowed to the total modular control under condition of performance of requirements of the curriculum and if for current educational activity he scored at least points of 64 (16 x 4).

Total module control is enrolled the student if he scored at least 50 points out of 80 points .

VII . A list of questions to prepare studentsto the final module control.

Module I. General pathological processes

Semantic module №1. Introduction. Morphology of injury and death of cells and tissues.

Pathological anatomy as a science, the industry of practical medicine and educational object.

The content, tasks, objects and methods of pathological research.

Levels of the study of the structural basis of diseases.

The main stages of development of pathomorphology.
The contribution of domestic scientists in development of world pathomorphology.
The concept of the ultrastructural pathology of cells.
Morphogenesis and morphology of intracellular and extracellular accumulation of proteins, carbohydrates and lipids.
Morphogenesis and morphology of pathological accumulation of endogenous and exogenous pigments.
Morphogenesis and morphology of disorders of mineral metabolism.
Damage and death of cells and tissues. Necrosis and apoptosis - morphological manifestations.
Structural mechanisms and clinical and pathological characteristics of the main periods of tanatogenesis.
Death: definition, characteristics and stages of development.
Postoperative period: definition, pathological features of damage to vital organs and restore their function

Semantic module №2 Defects of blood and lymph circulation.

Inflammation. Immunopathological processes. Regeneration. Processes of adaptation and compensation

Morphology of the disorders of ion-osmotic and water balance.
The morphology and the consequences of violations for different types of hyperemia.
Morphogenesis and pathomorphology of ischemia.
Morphogenesis and pathomorphology of a heart attack.
Determination and morphogenesis of the types of bleeding, hemorrhage.
Morphogenesis, pathomorphology, consequences of stasis.
Morphology, the effects of plasmorrhhea.
Morphology, types and effects of embolism.
Morphogenesis, pathomorphology, consequences of shock.
Morphology, the consequences of violations of lymph circulation.
Morphogenesis, pathomorphology, consequences of thrombosis, DIC-syndrome.
Definition of exudative inflammation. Species, morphological characteristics, clinical relevance of exudative inflammation.
Definition of proliferative inflammation.
Morphological characteristics, the consequences of proliferative inflammation.
Species, morphological characteristics of granulomatous inflammation.
Species, morphological characteristics of specific inflammation.
Morphological characteristics of different types of hypersensitivity.
Definition, classification and General morphological characteristics of autoimmune diseases.
Definition, General morphological characteristics of primary and secondary immune deficiency.
Principles of classification of amyloidosis.
Systemic amyloidosis (primary, secondary): morphological characteristics.
Localized and endocrine amyloidosis: morphological characteristics.
Amyloid of aging: morphological characteristics.
Definition, types, morphological characteristics of hyperplasia.
Definition, types, morphological characteristics of atrophy.

Definition, types, morphological characteristics of metaplasia.
Phase character of processes of compensation in pathological conditions.
Definition, types, morphological characteristics, hypertrophy.
Morphological and functional peculiarities of myocardial hypertrophy.
Pathology is a disadaptation of the body.
Cellular and intracellular forms of regeneration.
Types of regeneration: physiological, reparative, pathological.
The morphogenesis and regenerative processes.
Granulation tissue: morphological characteristics.
Types of wound healing.
Sclerosis.

Semantic module №3. Tumors. Diseases of blood system.

The definition of tumor growth.
The modern theory of carcinogenesis.
The definition of dysplasia, its types, the role of dysplasia in carcinogenesis.
Precancerous (pre-cancerous) States and changes morphology.
Features of the tumor cells.
Morphogenesis and histogenesis of tumors.
The types of tumors.
Morphological characteristics of benign tumors.
Morphological features of malignant tumors.
Metastasis: types, patterns, mechanisms.
The system is not metastatic effects.
General characteristics and nomenclature of tumors from tissues originating from the mesenchyme.
Morphological features of tumors from tissues originating from the mesenchyme.
Morphological features of malignant tumors of tissues derived from the mesenchyme.
Ways of metastasis of sarcoma.
Nomenclature of tumors of the nervous tissue.
Morphological features of tumors of the central nervous system.
Features of metastasis of tumors of the central nervous system.
Nomenclature and morphological features of tumors of the autonomic nervous system.
Nomenclature and morphological features of tumors of the peripheral nervous system.
Nomenclature of tumors derived from melanin-forming tissue. Nevi, their varieties.
Morphological characteristics of melanoma, its morphological forms. The value of precancerous changes.
Nomenclature of tumors from epithelium.
Morphological features of tumors from the epithelium without specific localization of benign (papilloma, adenoma) and malignant (cancer).
Histological variants of cancer.
Features of cancer metastasis.
Tumor growth in children compared with adults.
Dysontogenetic tumors: hamartoma and hamartoblastoma morphological manifestations.

Teratomas and teratoblastoma morphological manifestations.
Tumors from cambial embryonic tissues - morphological manifestations.
Tumors of childhood, which develop on the type of tumors in adults - morphological manifestations.
Definition, classification and morphological characteristics of anemias.
Definition, classification, morphological characteristics thrombocytopenia and thrombocytopathy.
Classification, morphological characteristics of the coagulopathy.
Definition, classification, General morphological characteristics of the leukemias.
Species, stage, morphological characteristics of acute leukemia.
Species, stage, morphological characteristics of chronic leukemia.
Histopathological types of the morphological feature of Hodgkin's disease, the cause of death.
General characteristics, classification, morphological manifestations and prognosis of non-Hodgkin lymphoma.

Module II. Special pathomorphology.

Semantic module №4. Diseases of cardiovascular system.

The definition of atherosclerosis, risk factors, current theories.
The morphogenesis of macroscopic changes in atherosclerosis.
Morphogenesis of microscopic changes in atherosclerosis.
Clinical and morphological forms of atherosclerosis, organ lesions in atherosclerosis.
Definition, risk factors, the relationship of coronary heart disease with arteriosclerosis and hypertension.
Morphology of acute, recurrent and repeated myocardial infarction.
Consequences, complications, causes of death myocardial infarction.
Morphological characteristic, complications, causes of death in chronic ischemic heart disease.
Hypertension: definition, risk factors.
Morphological changes in vessels, heart, changes in organs in hypertension.
Definition, classification of secondary (symptomatic) hypertension.
General characteristics of systemic connective tissue diseases: violation of the immune system homeostasis and progressive disorganization of connective tissue in rheumatic diseases.
Classification, morphogenesis and morphological characteristics of rheumatism.
Endocarditis, myocarditis, pericarditis and pancarditis: classification, morphological characteristics, complications.
Morphology of articular manifestations (stages of progression of rheumatoid arthritis), complications and consequences of rheumatoid arthritis.
The morphology of ankylosing spondylitis.
Morphogenesis, pathomorphology, complications and causes of death in systemic lupus erythematosus.
Pathological anatomy, visceral manifestations, complications, causes of death in systemic sclerosis.
Pathological anatomy of dermatomyositis. Complications, causes of death.

Pathomorphology of systemic vasculitis: nonspecific aortoarteritis, periarteritis nodosa, Wegener's granulomatosis, and thromboangiitis obliterans.

Pathological anatomy of endocarditis Leffler.

Pathological anatomy of acquired heart disease.

Pathological anatomy of acquired (secondary) cardiomyopathies.

Semantic module №5. Diseases of respiratory organs. Diseases of digestive organs.

General characteristics, classification, background diseases and risk factors of cerebrovascular disease.

Infarction (ischemic stroke) of brain: morphological characteristics.

Morphogenesis, morphological characteristics of selective necrosis of neurons (ischemic encephalopathy).

Morphological characteristics, the consequences of hemorrhagic stroke.

Morphological characteristics, complications of spontaneous intracranial hemorrhage.

Morphological characteristics, complications of spontaneous subarachnoid hemorrhage.

Morphological characteristics, complications of Alzheimer's disease.

Morphological characteristics, complications of multiple sclerosis.

Morphological characteristics, complications of amyotrophic lateral sclerosis.

Morphological characteristics, complications of postresuscitation encephalopathy.

Morphological characteristics, complications of diseases of the peripheral nervous system.

Morphological characteristics of acute bronchitis.

Modern classification of pneumonias.

Morphological characteristics and complications of lobar pneumonia.

Morphological characteristics and complications of acute focal pneumonia.

Morphological characteristics and complications of acute interstitial pneumonia.

Morphological characteristics of acute destructive processes of lungs.

Definition and classification of chronic nonspecific respiratory diseases.

Morphological characteristics and complications of chronic bronchitis.

Morphological characteristics of chronic obstructive emphysema.

Morphological characteristics and complications of bronchiectasis.

Morphological characteristics and complications of bronchial asthma.

Morphological characteristics of chronic diffuse lung disease investment.

Morphological characteristics of idiopathic pulmonary fibrosis.

Morphological characteristics of lung cancer.

Diseases of esophagus: morphological characteristics.

Morphological characteristics of chronic gastritis.

Morphology of peptic ulcer disease.

Complications of peptic ulcer disease.

Cancer of the stomach. Macroscopic and histological forms. Features of metastasis.

Morphology of ulcerative colitis.

Morphology of Crohn's disease.

Clinical and morphological forms of appendicitis.

Complications of appendicitis.

Tumors of the colon.

Morphological characteristics, prognosis of fatty hepatosis.

Definition, morphological characteristics, prognosis of toxic dystrophy of the liver.
Morphogenesis, shape, morphological characteristics of acute hepatitis.
Morphological characteristics of chronic hepatitis, the degree of activity and chronicity.
Morphological characteristics of the major types of cirrhosis.
Cancer of the liver, morphological characteristics.
The morphology of gallstones.
Morphology of acute and chronic cholecystitis.
Morphological characteristics, complications of acute and chronic pancreatitis.
Tumors of the pancreas, morphological characteristics.

Semantic module №6. Diseases of endocrine system. Diseases of urinogenital system. Diseases of pregnancy and puerperal period. Pathological conditions of the head as a result pre-and perinatal pathology.

Morphological characteristics, complications and causes of death disease Itsenko-Kushinga.
Morphological characteristics, complications of acromegaly.
Morphological characteristics of diabetes insipidus.
Morphological characteristics of diabetes.
Complications of diabetes: the morphological characteristic of diabetic macro - and microangiopathy.
Multinodular goiter. Morphological characteristics, complications, consequences.
Graves ' disease (diffuse toxic goiter, Basedow's disease): morphological features of the thyroid gland, visceral manifestations.
Hypothyroidism. Cretinism. Myxedema. Morphological characteristics.
Definition, pathomorphology of Hashimoto's thyroiditis.
Morphological characteristics of primary and secondary hyperparathyroidism.
Primary chronic insufficiency of cortex substance of the adrenals (Addison's disease): morphological manifestations.
Syndrome of Waterhouse-Friderichsen: morphological manifestations.
Morphological characteristics, effects of inflammatory diseases, precancerous cervical processes.
Morphological manifestations of inflammatory diseases of the endometrium and the myometrium.
Morphological manifestations of precancerous processes and cancer of endometrium and myometrium.
Morphological characteristics, complications, consequences of inflammatory diseases of the breast.
Morphological characteristics of fibro-cystic breast changes.
Morphological characteristics, complications, consequences, benign nodular prostatic hyperplasia.
Morphological characteristics of inflammatory diseases of the testicles.
Modern clinical-morphological classification of kidney disease.
Post-infectious glomerulonephritis: morphological characteristics, outcomes.
Rapidly progressive: morphological characteristics, outcomes.
Chronic glomerulonephritis: morphological characteristics, outcomes.
Classification, morphological manifestations of idiopathic nephrotic syndrome.

Morphological manifestations of membranous nephropathy.
Morphological manifestations of focal segmental sclerosis.
Morphological characteristics, prognosis of necrotic nephrosis.
Morphological characteristics, prognosis of tubulointerstitial nephritis.
Morphological characteristics, prognosis of acute and chronic pyelonephritis.
Morphogenesis and morphological characteristics of nephrolithiasis, consequences.
Chronic renal failure. Nephrosclerosis. Pathological anatomy.
Morphological changes of bones in hyperparathyroidism.
Morphological characteristics, complications of Paget's disease.
Morphological characteristics, complications of fibrous dysplasia.
Classification, morphological diagnostics, complications and consequences of ectopic pregnancy.
Classification, morphological characteristics ORN-gestosis.
Classification, morphological characteristics and prognosis of trophoblastic disease.
Morphological manifestations, effects on the fetus and the woman's body, the consequences of infectious processes in the placenta.
Morphological manifestations of disorders of blood circulation in the placenta.
Morphological characteristics, prognosis of intrauterine development of the fetus.
Birth injury: classification and morphology.
Morphological characteristics of hemolytic disease of the newborn.
Morphological characteristics of hemorrhagic disease of the newborn.
Morphological characteristics, complications of pneumopathy.
Morphological characteristics, the effects of asphyxia.
Morphological characteristics of intrauterine infection of the fetus.
Morphological characteristics, the consequences of noncommunicable fetopathy: diabetic and alcoholic fetopathy.
Classification and morphology of congenital malformations.
Morphological characteristics of disrupted and inadequate supply.
Morphogenesis and morphological characteristics of pneumoconiosis.
Pathological anatomy, consequences, causes of death in injuries associated with changes in atmospheric pressure.
Pathological anatomy, consequences, causes of death in injuries associated with the influence of industrial noise.
Pathological anatomy, consequences, causes of death from diseases associated with the influence of electromagnetic waves of radio frequencies.
Pathological anatomy, consequences, causes of death from temperature effects.
Pathological anatomy, consequences, causes of death from injury caused by electric current.
Pathological anatomy, consequences, causes of death from diseases associated with the influence of ionizing radiation.

Semantic module №7. Pathology of dentoalveolar system and organs of oral cavity.

Pathological anatomy of caries. Clinical and morphological stages of tooth decay.
Non-carious injuries of hard tooth tissues.
Clinical and morphological characteristics of pathological conditions of the pulp and the feather of the apical tissues of the tooth.
Clinical and morphological characteristics of reactive changes of the pulp.

Clinical morphological characteristics of acute and chronic pulpitis.
Periodontitis. Morphogenesis and morphological manifestations of periodontitis.
Pathological anatomy of gingivitis. Morphological forms of gingivitis.
Dental deposits.
Pathological anatomy of periodontitis.
Periodontal disease, morphogenesis and morphological manifestations.
Idiopathic progressive periodontitis.
Inflammatory diseases of the jaws. Morphogenetic manifestations. Complications and outcomes.
Cysts of the jaw bones.
Diseases of the salivary glands. Sialadenitis. Sialolithiasis. Cysts of glands.
Diseases of the lips, tongue, soft oral cavity. Cheilitis. Glossitis. Stomatitis.
Parodontome.
Tumor-like diseases of the jaws.
Nonodontogenic and odontogenic tumors of the jaw bones.
Tumors and tumor-like diseases of the salivary glands.
Tumors and tumor like diseases of lips, tongue, soft oral cavity.

Semantic module №8. Pathomorphology of infectious diseases.

General characteristic of infectious process: the entrance gate of infection, primary infectious complex, spreading and dissemination, ways of transmission of infectious diseases.
Variants of local and general reactions in infections.
Morphological characteristics, complications, consequences, causes of death in bacterial dysentery.
Morphological characteristics, complications, consequences, causes of death in typhoid fever.
Morphological characteristics, complications, consequences, reasons of death in salmonellosis.
Morphological characteristics, complications, consequences, reasons of death in the yersiniosis.
Morphological characteristics, complications, consequences, causes of death for respiratory viral infections.
Morphological characteristics, complications, consequences, reasons of death in typhus typhoid.
Morphological characteristics, complications of infectious diseases of the brain (viral encephalitis).
Morphological characteristics, complications prionic CNS lesions.
Morphological characteristic, complications, causes of death in AIDS.
Morphological characteristics, complications, consequences, causes of death in measles.
Morphological characteristics, consequences, causes of death in infectious mononucleosis.
Morphological characteristics, complications, consequences, causes of death in mumps.
Morphological characteristics, complications, consequences, causes of death in diphtheria.

Morphological characteristics, complications, consequences, reasons of death in scarlet fever.

Morphological characteristics, complications, consequences, causes of death with whooping cough.

Morphological characteristics, complications, consequences, reasons of death in the polio.

Tissue reactions in tuberculosis.

Pathological anatomy of primary tuberculosis complex.

The morphology of the progression of primary tuberculosis.

Pathological anatomy of chronic course of primary tuberculosis.

Morphological characteristics, complications, consequences, causes of death in hematogenous tuberculosis with predominant lung involvement.

Morphological characteristics, complications, consequences, causes of death in hematogenous tuberculosis with predominant lesion of the internal organs and skeletal system.

Morphological characteristics, complications, consequences, causes of death in secondary tuberculosis.

Modern pathomorphosis of tuberculosis.

Clinical and anatomical forms of sepsis: septicemia, pyosepticemia, septic (infectious) endocarditis.

Plague: clinical and morphological forms, complications, causes of death.

Tularemia: clinical and morphological forms, causes of death.

Anthrax: clinical and morphological forms, causes of death.

Cholera: clinical and morphological forms, complications, causes of death.

Morphology of congenital syphilis.

The morphology of acquired syphilis.

Morphological characteristics, complications, outcomes, causes of death in malaria.

Morphological characteristics of balantidiasis.

Morphological characteristics of amebiasis.

Morphological characteristics of trichinosis.

Morphological characteristics of echinococcus.

Morphological characteristics of cysticercosis.

Morphological characteristics of opisthorchiasis.

Morphological characteristics of schistosomiasis.

Pathological anatomy of ringworm.

Pathological anatomy of actinomycosis.

Pathological anatomy of candidiasis.

Pathological anatomy of aspergillosis.

Approximate list of practical works and tasks for final control of modules

Module 1. Common pathological processes.

Semantic module №1: Introduction. Morphology of injury and death of cells and tissues.

To interpret and describe the changes in diffraction patterns "Pathology of mitosis", "Pathology of the cytoskeleton", "Pathology cellular connections", "Hyperplasia of mitochondria", "Hyperplasia of the granular endoplasmic reticulum of the cell", "Nuclear items".

To interpret microscopic changes in protein, fat and carbohydrate stocks. Describe and draw the microslides "Hyaline droplet degeneration in the epithelium of proximal tubules of kidney", "Squamous cell carcinoma of the skin", "Steatosis of liver", "Fatty degeneration of the myocardium", "Glycogen in the kidney", Hyalinosis of the arterioles of the spleen ", "Arteriolosclerosis nephrosclerosis ", " Obesity of the heart."

To describe and interpret macroscopic changes of the skin in generalized ichthyosis, steatosis of liver and describe macro specimens "Goose liver", "Tiger heart", "Spleen in Gaucher disease".

To describe and interpret the hemosiderosis on gross specimens "Brown lungs induration", "Hemosiderosis of spleen", "Hemosiderosis of the liver", to interpret changes in the skin with melanoma, nevi and Addison's disease, to describe gross specimens "Melanoblastoma of skin", "Metastasis melanoblastoma in the liver"; to interpret macroscopic changes in the heart in the metabolic lipofuscin, describe microslide "Brown atrophy of the myocardium".

To interpret microscopic changes in the hemosiderosis, describe and sketch microslide "Brown lungs induration", microscopic changes with melanoma, to describe and to sketch a microslide. "Melanoblastoma of skin", "Melanoblastoma of eyes."

To interpret macroscopic changes in organs in the calcification, to describe gross specimens "Metastatic calcification of the auricle", "Metastatic calcification of the lung", "Cement fibromyoma of uterus", "Lithopedion"; to interpret changes in stone formation, to describe gross specimens "Stones of the gall bladder", "Kidney stones" "Bladder stones", "Salivary calculus".

To interpret microscopic changes in the epithelium of tubules of kidney and in the vessel walls of metastatic calcification, describe and sketch microslide "Metastatic calcification of the kidney in parathyroid degeneration"; describe and sketch microslide "Cement uterine fibroids".

To interpret changes in the cell during apoptosis on diffraction patterns. Describe diffraction patterns "Apoptotic bodies" (the body of Councilmen hepatitis).

To describe and interpret macroscopic changes in different morphological forms of necrosis, to describe gross specimens "Noma of cheek in measles child", "myocardial Infarction", "Infarction of spleen", "Infarction of kidney", "Moist gangrene of the foot", "Dry gangrene of the lower limb", "pressure Sores".

To treat necrotic changes of the epithelium of the renal tubules in the microslide. To describe and to sketch a microslide. "Necrosis of the epithelium of proximal tubules of kidney", "Caseous necrosis in tuberculous lymphadenitis".

Semantic module №2. Defects of blood and lymph circulation. Inflammation. Immunopathological processes. Regeneration. Processes of adaptation and compensation

To interpret and describe the second stage of thrombus formation on diffraction patterns "the Second stage of thrombus formation".

To describe and interpret macroscopic changes in chronic venous hyperemia, to describe gross specimens "Nutmeg liver", "Brown lungs induration", "cyanotic induration of spleen", "cyanotic induration of the kidney"; to describe and interpret macroscopic changes in hemorrhagic erosion of the stomach, chronic ulcer of the stomach with erosion of vessels and hemorrhages, petechial hemorrhages in the brain, hemorrhagic pachymeningitis, cephalohematoma, intracerebral hematoma, describe and interpret macroscopic changes in thrombosis, describe gross specimens "Mural mixed thrombus in the aorta in atherosclerosis", "PE", "Occlusive red thrombus at the bifurcation of the aorta (Leriche symptom)", "Thrombosis varicose veins of lower extremities", "Chronic cardiac aneurysm with mural thrombus", "Hemorrhagic infarction of the lungs", "Ischemic infarction with hemorrhagic halo infarction", "Ischemic infarction of the spleen", "Postinfarction cyst of brain".

To interpret microscopic changes in chronic venous plethora, describe and sketch microslide "Nutmeg liver", "Brown lungs induration", "Stasis in the capillaries of the brain", "Petechial hemorrhages in the brain", "Blood clots in the deep veins of the lower extremities", "The clot organized with signs of recanalization and revascularization", "Hemorrhagic infarction of the lungs".

To interpret and describe the mechanism of formation of exudate on diffraction patterns "Pinocytosis in the endothelium of vessel in inflammation", "the Emigration of the neutrophil through the vessel wall during inflammation".

To describe and interpret macroscopic changes in organs during inflammation in gross specimens "Croupous pneumonia (stage of grey hepatization)", "Fibrinous-purulent pericarditis", "Diffuse purulent leptomeningitis", "Hemorrhagic leptomeninges", "Abscesses in the brain", "Diphtheric colitis", the "Phlegmon of a brush", "lung Abscess", "Purulent osteomyelitis", "Catarrhal gastritis"; to describe and interpret macroscopic changes in organs in the productive inflammation to describe gross specimens "Cardiosclerosis", "Micronodular (portal) cirrhosis of the liver", "Warts", "Polyp of small intestine", "Miliary tuberculosis of lungs", "liver Echinococcosis", "Hydatid cyst of the spleen".

To interpret microscopic changes in different types of exudative inflammation, to describe and to sketch a microscope slide. "Croupous pneumonia (stage of grey hepatization)", "Diffuse purulent leptomeningitis", "Fibrinous-purulent pericarditis", when producing specific and non-specific inflammation, to describe the microslides "Cardiosclerosis", "Micronodular cirrhosis of the liver", "Miliary tuberculosis of lungs".

To describe and interpret macroscopic changes in the organs of gross specimens "Thymomegalia", "Hashimoto's Thyroiditis", "Lupus nephritis", "Rheumatic endocarditis", "Chronic gastritis"; to describe and interpret macroscopic changes by the reaction of hypersensitivity of II type gross specimens "Large mottled kidneys"; to describe and interpret macroscopic changes of organs in amyloidosis in gross specimens "Amyloidosis of spleen (sago and sebaceous spleen)", "Amyloidosis of liver", "renal Amyloidosis", "Amyloidosis of lungs".

To interpret and draw the microscopical changes in microslides "Chronic decompensated tonsillitis"; to interpret and draw the microscopical changes in hypersensitivity reactions type I by microslides "Biopsy of bronchus in bronchial asthma", the III type of microslides "lupus nephritis", type IV for microslides "Viral active hepatitis"; to describe, interpret and draw microscopical changes of organs in

amyloidosis in microslides "Amyloidosis of spleen (sago and sebaceous spleen)", "Amyloidosis of liver", "renal Amyloidosis", "Amyloidosis of lungs".

To describe, to interpret changes in cardiomyocyte hypertrophy of diffraction patterns "cardiac Hypertrophy". To describe and interpret macroscopic changes of organs in gross specimens "Concentric hypertrophy of the heart", "Eccentric hypertrophy of myocardium", "Myocardial infarction", "Senile atrophy of the spleen", "Hydronephrosis", "Acromegaly", "Splenomegaly", "Emphysema", "Elephantiasis of the lower limb ", " Hydrocephalus ", " Brown atrophy of the myocardium".

To describe, interpret and draw microscopical changes of organs microslides "Cardiac hypertrophy", "Cystic glandular hyperplasia of the endometrium", "Granulation tissue", "Large-focal cardiosclerosis", "Emphysema".

Semantic module №3. Tumors. Diseases of system of blood.

To interpret the ultrastructural changes of tumor cells in diffraction patterns "Ultrastructural atypical tumor cells".

To describe and characterize benign tumor from smooth muscular tissue "Leiomyoma of uterus ", of fibrous tissue " Fibroma of skin ", " uterine Fibroids, " the adipose tissue "Lipoma", blood vessels "Cavernous hemangioma of the liver," lymphatic vessels "Lymphangioma"; to describe and characterize malignant tumor of bone "Osteosarcoma", of fibrous tissue "Fibrosarcoma".

To describe, interpret and draw microscopical changes in benign tumor from smooth muscle tissue " Leiomyoma of uterus ", from blood vessels "Cavernous hemangioma of the liver"; in malignant tumor from connective tissue "Undifferentiated fibrosarcoma".

To describe and characterize the malignant tumor of melanin-forming tissue in the postoperative specimen was performed "Melanoma of skin", the lymph node on the macro specimens "melanoblastoma Metastasis in a lymph node" liver for macro specimens "melanoblastoma Metastasis to the liver"; to describe and characterize benign and malignant tumors of the Central and peripheral nervous system at gross specimens "Meningioma", "Ependymoma", "Chorioepithelioma", "Astrocytoma," "Glioblastoma", "Neurofibroma", "Neurofibromatose".

To describe, interpret and draw microscopical changes in malignant tumors of melanin-forming tissue "Melanoma", "Melanoma of eye"; to describe, interpret and draw microscopical changes in benign and malignant tumors of the Central and peripheral nervous system microslides "Meningioma", "Glioblastoma", "Neurofibroma".

To describe and characterize benign and malignant tumors of the epithelium at gross specimens "Papilloma of skin, "Papilloma of the bladder", "gastric polyps", "Polyp of small intestine", "Cystadenoma of the ovary", "Breast fibroadenoma", "Stomach cancer", " Breast cancer ", " Uterine cancer ", " Ovarian cystcarcinoma ".

To describe, interpret and draw microscopical changes in benign and malignant tumors of the epithelium microslide "Papilloma of skin", "Adenocarcinoma of the stomach", "Squamous cervical cancer".

To describe and characterize the dysontogenetic tumor in gross specimens "Mature teratoblastoma".

Module 2. Special pathomorphology.

Semantic module №4. Diseases of cardiovascular system.

To describe and interpret changes of bone marrow in the macro specimens "Bone marrow in anemia"; to describe and interpret changes of kidney in the gross specimens "Extramedullary hematopoiesis in the kidneys in chronic anemia"; "Hemolytic anemia in microslide " Hemosiderosis of spleen ".

To describe, interpret and draw microscopical changes in the liver in chronic anemia by microslide "Fatty liver".

To describe the blast cells in leukemia on diffraction pattern "Blast cells in leukemia".

To describe and interpret changes in the brain in acute leukemia in the gross specimens "Petechial hemorrhages in the brain"; to describe and interpret changes in the tonsils in the gross specimens "Necrotizing tonsillitis in acute leukemia"; of lymphatic nodes changes according to microslide "Lymph nodes with lymphatic leukemia"; changes of the spleen in the gross specimens "Splénomegaly in myeloid leukemia"; changes the lymph nodes and spleen in the gross specimens "Hodgkin's disease", "Porphyry spleen".

To describe, interpret and sketch microscopic changes in liver microslides "The chronic myeloid leukemia", "Acute leukemia "; to describe, interpret and sketch microscopic changes in the lymph nodes in the microslide with Hodgkin's Lymphoma.

To describe and interpret changes of the endothelium in the diffraction pattern "Pre-lipidic stage of atherosclerosis".

To describe and interpret changes in atherosclerosis in the gross specimens "Atherosclerosis of aorta", "Atherosclerosis of the aorta with the aneurysm of an abdominal part", "Atherocalcinosis of arch of the aorta", "Atherosclerosis of cerebral vessels", "Stenosing atherosclerosis of the coronary arteries of the heart with thrombosis and infarction", "Atherosclerosis of renal artery ", "Leriche's Syndrome", "Gangrene of foot in atherosclerosis of vessels of lower extremities"; to describe and interpret changes of heart in the gross specimens "Cardiac hypertrophy", "Myocardial infarction", "large-focal cardiosclerosis", "Small focal cardiosclerosis", "Chronic aneurysm of heart", "Atherosclerotic nephrosclerosis".

To describe, interpret and draw changes of the organs in the microslides "Lipidosis of the aorta", "Stenosing atherosclerosis of the coronary artery", "Necrotic phase of myocardial infarction", "Large-focal cardiosclerosis".

To describe and interpret changes of cardiomyocytes in the diffraction pattern "Cardiac hypertrophy"; changes in the walls of arterioles in the diffraction pattern "Spasm of the arterioles".

To describe and interpret changes on the macro specimens "stroke", "Ischemic infarction of brain", "Postinfarction cyst of brain", "Concentric hypertrophy of the heart", "Eccentric hypertrophy of the heart", "Primary-wrinkled kidney".

To describe, interpret and sketch the change in microslide "Arteriolosclerosis nephrosclerosis", "Cardiac hypertrophy", "Hemorrhagic infarction of the brain."

To describe and interpret fibrinoid changes of endocardial rheumatism in the diffraction pattern

To describe and interpret changes on the gross specimens "Acute valvular endocarditis", "Relapsing-warty endocarditis", "Fibroplastic endocarditis", "Mitral valve stenosis", "Fibrous pericarditis", "Nephrosclerosis in lupus glomerulonephritis".

To describe, interpret and draw changes of organs in the microslides "Acute valvular endocarditis", "Lupus nephritis", "Periarterial sclerosis in the spleen in systemic lupus erythematosus", "Autoimmune parotitis in Sjogren's disease".

To describe and interpret changes on the gross specimens "Stroke", "Ischemic infarction of brain", "Postinfarction cyst of brain", "Spinal cord in multiple sclerosis", "Spinal cord in amyotrophic lateral sclerosis", "Brain during the postresuscitation encephalopathy".

To describe, interpret and draw changes in the brain and spinal cord in microslides "Ischemic brain stroke", "Hemorrhagic stroke of the brain", "Cerebral cortex in Alzheimer's disease", "the Front horns of spinal cord in amyotrophic lateral sclerosis", "Perivascular demyelination in multiple sclerosis", " Selective necrosis of neurons (ischemic encephalopathy).

Semantic module №5. Diseases of respiratory organs. Diseases of digestive organs.

To describe and interpret glomerular intracapillary sclerosis emphysema in diffraction patterns.

To describe and interpret changes in gross specimens "Croupous pneumonia in the stage of gray hepatization", "Bronchopneumonia", "Chronic bronchitis with bronchiectasia and pulmonary fibrosis", "Pulmonary heart", "Abscess of lung", "Idiopathic fibrosing alveolitis", "Emphysema of lungs", " Amyloidosis of kidney", "Central lung cancer", " Peripheral lung cancer".

To describe, interpret and draw changes of lungs in microslides "Carnification lung", "Bronchial pneumonia", "Bronchiectasis and pneumosclerosis", "Chronic obstructive emphysema".

To describe and interpret changes in gross specimens "Chronic atrophic gastritis", "Chronic stomach ulcer", "Chronic gastric ulcer penetrating into the pancreas", "Stomach chronic ulcer with erosion of vessels", "Phlegmonous appendicitis", "Gastric polyposis", "Exophytic gastric cancer", " Diffuse gastric cancer", " Metastasis of gastric cancer to the liver", "Metastases of gastric cancer in the ovaries (ovarian cancer Cronenbergs)", " Polyposis of the colon", " Sigmoid colon cancer".

To describe, interpret and draw changes of organs in the microslides "Chronic gastric ulcer in the acute stage", "Haemorrhagic erosion of stomach", "Acute phlegmonous appendicitis", "Chronic atrophic gastritis with intestinal metaplasia, Helicobacter in gastritis".

To describe and interpret changes in diffraction pattern "Hydropic dystrophy of hepatocytes in viral hepatitis".

To describe and interpret changes in gross specimens "Toxic degeneration of the liver", "Miliary cirrhosis of the liver", "Nutmeg liver cirrhosis", "Miliary cirrhosis of the liver", "Varicose veins of the esophagus", "Chronic calculous cholecystitis", "Hemorrhagic necrosis", "Hepatic steatosis", "Coarse nodular cirrhosis", " Liver in obstructive jaundice", "Liver multicentricity cancer on aphids cirrhosis", "Cancer metastases in the liver", " Cancer of the pancreatic head".

To describe, interpret and draw changes in the liver and the pancreas in the microslides "Miliary cirrhosis of the liver", "Toxic degeneration of the liver", "Acute viral hepatitis (biopsy of liver)", "Chronic viral hepatitis with minimal activity (biopsy of liver)", "Chronic viral hepatitis with high activity (biopsy of liver)", "Monolobular alcoholic cirrhosis of the liver", "Hemorrhagic necrotizing pancreatitis", "Chronic pancreatitis".

Semantic module №6. Diseases of endocrine system. Diseases of urinogenital system. Diseases of pregnancy and puerperal period. Pathological conditions of the head as a result pre-and perinatal pathology.

To describe and interpret changes of the organs of the endocrine system in the gross specimens "Atrophy of pancreas in diabetes", "Gangrene of foot in diabetes mellitus", "Skeleton in acromegaly", "Colloid goiter", "Adrenal adenoma", "Corticosteroma", "Bone with parathyroid dystrophy", "Capillary thyroid cancer", "Autoimmune Hashimoto's thyroiditis".

To describe, interpret and draw changes of the organs in the microslide "Macrofollicular colloid goiter", "Glomerular intracapillary in diabetic glomerulosclerosis", "Atrophy of pancreas in diabetes", "Autoimmune Hashimoto's thyroiditis".

To describe and interpret changes in diffraction pattern "Membranous nephropathy".

To describe and interpret changes of kidney in the gross specimens "Post-infectious glomerulonephritis", "Rapidly progressive glomerulonephritis", "Chronic glomerulonephritis", "Chronic pyelonephritis", "Amyloidosis of kidney", "Secondary-wrinkled kidney", "Hydronephrosis", "Kidney stone disease", "Polycystic kidney disease".

To describe, interpret and draw changes of kidneys in the microslides "Mesangiocapillary glomerulonephritis", "Extracapillary rapidly progressive glomerulonephritis", "Amyloidosis of kidney", "Membranous nephropathy", "Secondary-wrinkled kidney due to chronic glomerulonephritis", "Necrotic nephrosis", "Atrophy of kidney in hydronephrosis".

To describe and interpret changes of the female genital organs and breast in gross specimens "Pseudo cervix (endocervicoses)", "Breast cancer", "Multiple uterine fibroids", "Uterine cancer", "Cervical cancer"; to describe and interpret changes of the male genitals in the gross specimens "Nodular hyperplasia of prostate and hypertrophy of urinary bladder wall", "Prostate cancer", "Testicular seminoma".

To describe, interpret and draw changes of organs and tissues in microslides "Cystic glandular hyperplasia of the endometrium", "Endocervicoses"; to describe, interpret and draw changes of the male genitals in the microslides "Chronic prostatitis", "Nodular hyperplasia of prostate" "Prostate cancer".

Semantic module №7. Pathology of dentoalveolar system and organs of oral cavity.

To describe and interpret changes in the gross specimens "Tooth caries", "Medium caries", "Deep caries".

Describe, interpret and draw changes in the microslides "Average caries". Microscopically to determine the destruction of enamel, dentin-enamel junction. To indicate the presence of microbes in common dentinal tubules.

Describe, interpret and draw changes in the microslides "Acute purulent pulpitis". Microscopically to determine the acute inflammatory process with a dramatically advanced a full-blooded vessels and a diffuse leukocytic infiltration of the pulp.

Describe, interpret and draw changes in the microslides "Granulating periodontitis".

To describe and interpret changes in the gross specimens "Osteomyelitis of the mandible", "Fibrous epulis".

Describe, interpret and draw changes in the microslides "Angiomatous epulis", "epulis Gigantomania", "Ameloblastoma".

To describe and interpret changes in th gross specimens "Pleomorphic adenoma", "Cementoma", "Fibroma of the gums".

Semantic module №8. Болезни беременности и послеродового периода. Болезни пре- и перинатального периода. Морфология гипо- и авитаминозов. Болезни, вызванные деятельностью человека и влиянием внешней среды.

To describe and interpret changes of the organs in gross specimens "Molar pregnancy", "Horionepitelioma (liver metastases)", "Paper fruit", "Lithopedion", "Tubal pregnancy", "Postnatal endometritis".

To describe, interpret and sketch the changes of the organs during pregnancy pathology in the microslides "Remnants of abortion", "Horionepitelioma of uterus", "Molar pregnancy", "Placental polyp".

To describe and interpret changes of the organs in the gross specimens "Craniopagus", "Thoracopagus", "Isheopagus", "Anencephaly and acrania", "Cyclopia", "Ventricular septal defect of the heart", "Polycystic kidney disease", "Horseshoe kidney", "Megaloureter" , "Chondrodysplasia", "Cerebral hernia", "Cephalohematoma", "Anoxic brain damage in the newborn", "Pulmonary atelectasis", "Staphylococcal destruction of the lungs."

To describe, interpret and draw changes in organs in the pathology of pre - and perinatal period in the microslides "Hyaline membrane disease", "Aspiration pneumonia", "Bronchopulmonary dysplasia", "Anoxic brain damage in the newborn", "Polycystic kidney disease infantile type", "Lungs in mucoviscidosis", "Capillary hemangioma", "Mature teratoma", "Neuroblastoma", "Wilms Tumor".

To describe and interpret changes in the organs in hypo - and avitaminosis in the gross specimens "Craniotabes", "Ribs with rachitic beads", "Long tubular bone with rachitic bracelets", "Bleeding in the germination zone of bones (epiphysiolysis) in scorbutus".

To describe, interpret and draw changes in organs in hypo - and avitaminosis in the microslides "Damage of enchondral osteogenesis in richitis" (decalcification, staining with haematoxylin and eosin), "Keratomalacia of corneal in xerophthalmia", "Metaplasia of respiratory epithelium of the bronchi in avitaminosis A", "Hyperkeratosis and atrophy of the skin in pellagra".

To describe and interpret changes in the lungs in the gross specimens "Silicosis of lungs", "Silicotuberculosis of lung", "Pulmonary anthracosis".

To describe, interpret and draw changes of lungs in the microslides "Anthracosilicosis of lung", "Pulmonary silicosis".

Semantic module №9. Pathomorphology of infectious diseases.

To describe and interpret changes in the gross specimens "Fibrinous colitis in dysentery", "Cerebriform swelling of group follicles of small intestine at typhoid fever", "Ulcers of the small intestine in typhoid fever", "Hyperplasia of the spleen in typhoid fever", "Chronic polypous-ulcerative colitis", "Follicular-ulcerative tiflet in dysentery".

To describe, interpret and draw changes in different parts of the intestine and other organs in microslides "Cerebriform swelling of group follicles of small intestine at typhoid fever", "Hyperplasia of the mesenteric lymph node in abdominal typhus", "Fibrinous colitis in dysentery", "Diparities-ulcerative colitis in dysentery", "Appendicitis in yersiniosis".

To describe and interpret changes in the organs in the gross specimens "Hemorrhagic laringotraheobronhitis in the flu", "Hemorrhagic pneumonia in influenza", "Spleen in typhoid fever", "Pneumocystis pneumonia AIDS patient".

To describe, interpret and draw changes in the organs in the microslides "Serous-desquamative pneumonia", "Viral-bacterial pneumonia", "Encephalitis typhoid fever", "Typhousexanthema".

To describe and interpret changes in organs in the gross specimens "Laringotraheobronhit with measles", "Pneumonia in epidemic roseola", "Noma of cheek in epidemic roseola", "Diphtheria of pharynx", "Croupous laringotraheobronhit", "Heart in diphtheria", "Necrotizing tonsillitis in scarlet fever", "Purulent leptomeningitis", "Necrotic hemorrhagic rash of the skin in meningococemia", "Bleeding in the adrenal gland (syndrome Waterhouse-Friderichsen)", "Acute glomerulonephritis".

To describe, interpret and draw changes in organs in the microslides "Diphtheria of the larynx", "Giant-cell peribronchial pneumonia in epidemic roseola", "Parenchymatous myocarditis", "Purulent leptomeningitis", "Necrotizing tonsillitis in scarlet fever", "Glomerular intracapillary proliferative glomerulonephritis after scarlet fever".

To describe and interpret changes in the organs in the gross specimens "Primary tuberculous complex (pulmonary and intestinal)", "Healed pulmonary affect (focus of Rut)", "Miliary tuberculosis of lungs", "Miliary tuberculosis of the kidney", "Miliary tuberculosis of the spleen", "Tuberculous caseous lymphadenitis", "Acute cavern of lung", "Tuberculous caseous pneumonia", "Fibrous-cavernous tuberculosis of lungs", "Cirrhotic pulmonary tuberculosis", "Tuberculoma", "Leptomeningeal tuberculosis", "Tuberculous spondylitis".

To describe, interpret and draw changes in the organs in the microslides "Healed pulmonary affect (focus of Rut)", "Miliary tuberculosis", "Tuberculous caseous lymphadenitis", "Wall of cavity with fibrous-cavernous pulmonary tuberculosis", "Tuberculous caseous pneumonia".

To describe and interpret changes in organs in visceral and congenital syphilis in the gross specimens "Syphilitic mesaortitis", "Solitary gum of liver", "Lobed liver in syphilis", "Macerative placenta and the fetus in early congenital syphilis".

To describe, interpret and draw changes in the organs in the microslides "Syphilitic mesaortitis".

To describe and interpret changes in the organs in the gross specimens "Septic endometritis", "Embolic pyogenic nephritis", "Polypous-ulcerative endocarditis", "Purulent leptomeningitis", "Metastatic abscesses of the brain", "Metastatic abscesses of the lung", "Septic spleen", "Ulcerative lesions of the skin with chronostasis", "Shock kidney".

To describe, interpret and draw changes in the organs in the microslides "Embolic pyogenic nephritis", "Polypous-ulcerative endocarditis", "Septic endometritis", "Interstitial productive myocarditis", "Shock kidney", "Purulent leptomeningitis", "Necrotic nephrosis".

To describe and interpret changes in the organs in the gross specimens "Hemorrhagic leptomeningitis", "Carbuncle of the skin in anthrax".

To describe, interpret and draw changes in microslides "Enteritis in cholera".

To describe and interpret changes in the organs in the gross specimens "Unilocular echinococcus of the liver", "Multichamber echinococcus of the liver", "Brain in cystcirrhosis", "Spleen in malaria".

To describe, interpret and draw changes in the microslides "Wall of cavity and elements of echinococcus".

To describe and interpret changes in the organs in the gross specimens "Actinomycosis of the lungs", "Candidiasis of intestine".

To describe, interpret and draw changes in the microspecimens "Actinomycosis of the lungs", "Actinomycosis of the endometrium", "Candidiasis of lung", "Candidiasis of intestine".

V III. FORMS OF CONTROL

Current control is performed on each practical class according to specific purposes topic, during individual work of teacher with a student for those themes which a student is working independently and they are not included in the structure of practical classes. It is recommended to use the following means of diagnostics of level of preparation of students: computer tests, solving situational problems; - structured written work; structured according to the procedure of control of practical skills (assessment of knowledge and skills to analyze and interpret macro - and microscopic changes of cells, tissues, organs and systems with those or other pathological processes).

The maximum number of points assigned to students in mastering of each module (test credit) - 200, including for current educational activity - 120 points, results of final module control - 80 points.

Assessment of current training activities:

While mastering each topic module for current educational activity of student grades are given on a 4-point traditional scale, which are then converted into points depending on the number of topics in the module. The program was applied such a system to convert the traditional system of evaluation points:

traditional evaluation	Conversion to points	
	Module 1	Module 2
" 5"	6	7
" 4"	5	5

" 3"	3	4
" 2"	0	2

The maximum amount that a student can score in the study module is calculated by multiplying the number of points corresponding evaluation "5" on quantity of topics in the module with addition of points for individual independent work and is 120 points.

The minimum number of points that a student can score in the study module is calculated by multiplying the number of points corresponding evaluation "3" on quantity of topics in the module with addition of points for individual independent work.

Evaluation of independent work:

Evaluation of independent work of students that provided the subject next to classroom work, carried out during current control topics at the appropriate classroom.

Assessment topics to be considered only on independent work and not included in the topics of classroom training sessions, is monitored during the final module control.

Modular final control:

The final module control is carried out on completion of the study all subjects module on the last control lesson from the module.

To the final control allowed students who completed all types of work included in the curriculum and the study module scored points not less than the minimum.

The form of the final module control must be standardized and include control of theoretical and practical training. The concrete forms of final module control on pathomorphology determined in the work study program.

The maximum number of points final module control is 80 .

The final module control is passed if the student scored *at least 50 points.*

Evaluation of discipline:

Based on pathomorphology exposed only to students who have enrolled all modules in the discipline.

Estimation on discipline is exposed as average of the assessments for the modules, which are structured academic discipline.

Incentive points for the decision of the Academic Council may be added to the number of points on discipline to the students which have scientific publications or took the prize places for participating in the Olympics in the discipline among the Universities of Ukraine and others.

Objectivity of evaluation of educational activity of students is tested by statistical methods (correlation coefficient between the current progress and results of final module control).

Converting the number of points on discipline evaluation on the scale ECTS and 4-ball (traditional):

The number of points in the discipline, which assessed students converted to the scale **ECT** the following:

Point ECTS	Statistical indicator
A	The top 10% of students

B	The next 25% of students
C	The next 30% of students
D	The next 25% of students
E	The last 10% of students

The percentage of students is determined by sample for the students of this course within the relevant specialty.

The number of points in the discipline, which assessed students converted to 4-point scale thus:

Point ECTS	Point based on a 4-point scale
A	" 5"
B, C	" 4"
D, E	" 3"
FX, F	" 2"

Estimates of discipline FX, F ("2") are exposed students who have not passed at least one module on discipline after finish of its learning.

Estimate FX ("2") is assigned to students who scored the minimum number of points for current educational activity, but has not made final module control. They have the right to repeat the final module control not more than 2 (two) times during the winter holidays and for 2 (additional) weeks after the spring semester schedule approved by the rector.

Students who received an F rating at the end of study of discipline (did not fulfill the educational program of at least one module or have not scored for current educational activity module minimum amount points) must undergo re-training for individual curriculum.

EVALUATION CRITERIA OF KNOWLEDGE IN THE DISCIPLINE

Form monitoring and evaluation system in accordance with the requirements of the program of discipline and instructions adopted by decision of the Academic Council.

Assessment for the module is defined as the sum of estimations of current progress (according to the scale conversion of traditional evaluations in rating points), adopted by decision of the Academic Council.

The maximum number of points assigned to students in mastering the module is 200 points, including for current educational activity - 120 points, results of final module control - 80 points.

Regulations of practical training and criteria for evaluation of current educational activities

№	Work during the practical classes	Time (minutes)	Number of points	Conversion scale (the traditional score / points)
1.	Organizational issues	10	-	

2.	Check workbook, clarification of the topic	20	2 - 18-20 accord. 1 - 12-17 accord. 0 < 12 accord.	«2» - 0 «3» - 3 (Module 1) «3» - 4 (Module 2) «4» - 5 «5» - 6 (Module 1) «5» - 7 (Module 2)
3.	Test tasks (20 tests)	-	1 - performed 0 – not performed or wrong performed	
4.	Check homework in workbook (when students test tasks)	15	-	
5	Analysis of the performance of students test tasks	10	-	
6.	Break	20	1 - performed; 0 – not performed	
7.	Implementation of a practical task in a workbook in class Microslides Situational tasks. Analysis of completed tasks. Oral Interview	20	3 - the answers are correct and complete; 2 responses incomplete; 1 - the answers are partially correct; 0 - answers are wrong	
8.	Final evaluation	5	0-7	
Total:		2 h.		

The rules of the final module control and evaluation criteria

№	Work during the final module control	Time (minutes)	the maximum number of points	Conversion scale (the traditional score / points)
1.	Organizational issues Validation is performed practical tasks in workbook per semester	5		«2» - 0-49 «3» - 50-60 «4» - 61-70 «5» - 71-80
2.	Test assignment (30 tests)	50	50	
	The implementation of practical tasks: Gross specimens(colour photo) Microslides (colour micro photos) Case problem	15	3 3 4	
3.	Break	5	-	
4.	Theoretical issues (tickets):№1	20		

	№2		10	
	№3		10	
	№4		10	
			10	
5.	Interview on the theoretical questions of the ticket final evaluation	25	-	
Total:		2 h.	80	

Note: Practical skills module count if all processed the practical exercises in workbook.

IX . Methodological support

1. Methodical recommendations for teachers of General and special courses on pathomorphology.
2. Guidelines on General and special pathology for domestic, foreign students who study in Russian and foreign students who study in English.
3. Macro and micro specimens and photographs from the Bank of the Department.
4. Tables and other demonstrative materials.

X . Recommended literature

Basic

1. Морфология и гистология: фундаментальный атлас / под ред. Д.Д. Зербино, М.М. Багрия, Я.Я. Боднар, В.А. Дубравы. - Винница: Новая книга, 2016. - 2016. - 800.
2. Благодаров В. М. Общая патоморфология: тестовые задания. - К: НМУ им. А.А. Богомольца, 2012. - 354 с.
3. Струков А.И. Патологическая анатомия: учебник / А. И. Струков, В. В. Серов; под. ред. В.С. Пауков. - Шестой изд., Перераб. и доп. - М. : «ГЭОТАР-Медиа», 2015. - 880 с. : ил.
4. Кумар В. Основы патологии заболеваний по Роббинсу и Котрану. Учебник. В 3-х томах. Том 1: Главы 1-10. - М. : Логосфера. - 2014. - 624 с.
5. Патология: Учебник: В 2 т. / Под ред. М.А. Пальцева, В.С. Пауков. - М. : ГЭОТАР-Медиа, 2011. - Т. 1. - 512 с; Т. 2. - 512 с.
6. Патологическая анатомия. Атлас: Учеб. пособие для студ. мед. вузов и последипломного образования / под ред. А. В. Зайратьянца. - М. : ГЭОТАР - Медиа, 2012. - 960 с.

Additional

1. Струков А. И. Патологическая анатомия: учебник: пер. с рус. / А. И. Струков, В. В. Серов. - Четвёртый вид. - Х.: Факт, 2004. - 864 с.
2. Шлопов В. Г. Патологическая анатомия: учебник / В. Г. Шлопов. - Винница: Новая Книга, 2004. - 768 с.
3. Благодаров В. М. Основы патоморфологии. Ч. 1: Общая патоморфология. - М. : Тов. «Атлант ЮЭМСИ и», 2007. - 198 с.

4. Благодаров В. М. Специальная патоморфология. - М .: Тов. «Атлант ЮЭМСИ», 2010. - 359 с.
5. Клатт Э.К. Атлас патологии Роббинса и Котрана. Перевод с английского и научное редактирование А.Д. Мишнёва, А.И.Щёголева. - М .: Логосфера, 2010. - 544 с.
6. Роуз А. Атлас патологии / пер. с англ. под ред. Е.А. Коган. - М .: ГЭОТАР-Медиа, 2010. - 576 с.
7. Патология курс лекций. Том 1. Общий курс / Под ред. М.А. Пальцева. - Второй изд., Стереотипное. - М .: ОАО «Издательство« Медицина », 2007. - 280 с.
8. Патология курс лекций. Том 2. Частный курс / Под ред. М.А. Пальцева. - Второй изд., Стереотипное. - М.: ОАО «Издательство« Медицина », 2007. - 768с.
9. Синельников А. Я. Атлас макроскопическое патологии человека. - М .: РИА «Новая волна»: Издатель Умеренков, 2007. - 320 с.
10. Пальцев М. А. Атлас по патологической анатомии. / М.А. Пальцев, А. Б. Пономарев, Берестова А. В. - М. Медицина, 2007. - 432 с.

XI. Information resources

1. Web sites of universities and the electronic resources of the Internet