MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION,
MINISTRY OF EDUCATION AND SCIENCE OF THE KYRGYZ REPUBLIC

Govemment-run educational institution of higher professional education
Kyrgyz-Russian Slavic University named after B.N. Yeltsin

ENDORSED BY
Dean of ICMandBT
Abilova S.S.
"04" 04 2026

PROFESSIONAL CYCLE
Pathological Anatomy

Assigned to the Department of Pathological Anatomy
Academic Curriculum 31050151_24_56 ld in.plx
Specialty 560001 - KR General Medicine
(for foreign students)

Qualification physician
Mode of Study **Intramural**
Total Credit Value **_7___credit points**

Course Hours 252
including:
in-class learning 128
individual work 87.7
exams 35.5

Scope of testing semesters:
exams 5
credits 4

Course Hours Scheduling (per semester)

Semester Academic Year	4 (2.2)		5 (3.1)		Total	
Weeks	18		18			
Type of Traning	AC	CO	AC	CO	AC	CO
Lectures	32	32	16	16	48	48
Practical Session	48	48	32	32	80	80
Contact work during theoretical training	0,3	0,3			0,3	0,3
Contact work during the examination session			0,5	0,5	0,5	0,5
Including Interactive Session	3	3	3	3	6	6
Total In-class Session	80	80	48	48	128	128
Individual Work Assessment	80,3	80,3	48,5	48,5	128,8	128,8
Face-to-face Learning	63,7	63,7	24	24	87,7	87,7
Individual Work			35,5	35,5	35,5	35,5
Total	144	144	108	108	252	252

The program was compiled(s) by: senior teacher Orozaliev R.K

Reviewer(s): Head of the department of pathological physiology of the KRSU, d.m.s. prof. Kakeev B.;

Head of the department of pathological anatomy of the KSMA, d.m.s. prof. Satylganov I.J.

The Course Outline
Pathological anatomy
developed in full compliance with FSES 3+:
Federal State Education Standards of Higher Professional Education for students trained for specialty 31.05.01 (general medicine) The Ministry of Education and Science of the Russian Federation Order of 21.09.2021 y. № 1578/1

in accordance with Academic Curriculum:
Qualification 560001 - KR General Medicine
confirmed by KRSU Board of Academics in 30.04.25 record № 13.

The Course Outline endorsed by Pathanatomy Department Meeting
Record of 04.09 2025. №2
Valid for: 2024-2029 academic year
The Head of Department associate Professor Ahmetova M.I.

RECORD OF CHANGES

to the discipline (module) working program

Pathological Anatomy

№. n/n	Basis for introducing the change	Section / Item (Clause)	Content of the change
1.	In accordance with Order No. P-357 dated June 24, 2026, 'On the Transformation of the Medical Faculty into the Institute of Clinical Medicine and Biomedical Technologies of the Kyrgyz-Russian Slavic University', as well as on the reorganization and unification of the following departments: the Department of Pathological Physiology, the Department of Pathological Anatomy, and the Department of Forensic Medicine, into the Department of Pathology and Forensic Medicine	Assigned to the Department of	Pathology and Forensic Medicine

1. COURSE OUTLINE OBJECTIVES
1.1. The purpose of the discipline (module) is to acquire the knowledge of the structural bases of diseases, their etiology and pathogenesis, as well as the principles of clinical anatomical analysis and the construction of a pathoanatomical diagnosis
1.2. Discipline "Pathological anatomy" is included in the mathematical and natural-science cycle (C 2), specialty - medical science, course - 2, 3, semesters - IV, V

2. PLACE OF THE COURSE IN THE EDUCATIONAL PROGRAM	
Educational Program Units:	
2.1	**Students' Preliminary Training Requirements:**
2.1.1	Microbiology, Virology
2.1.2	Normal physiology
2.1.3	Histology, embryology, cytology
2.1.4	Immunology
2.1.5	Anatomy
2.1.6	Latin language
2.2	**Course Units and Practical Sessions imposing the prior Proficiency**
2.2.1	Obstetrics and gynecology
2.2.2	Neurology, medical genetics, neurosurgery
2.2.3	Faculty Therapy
2.2.4	Faculty Surgery
2.2.5	Epidemiology
2.2.6	Occupational diseases
2.2.7	Urology
2.2.8	Endocrinology
2.2.9	Hospital Therapy
2.2.10	Hospital Surgery
2.2.11	Infectious Diseases
2.2.12	Otorhinolaryngology
2.2.13	Pediatrics
2.2.14	Ophthalmology
2.2.15	Traumatology, orthopedics
2.2.16	Pediatric surgery
2.2.17	Oncology, radiation therapy
2.2.18	Sectional course
2.2.19	Stomatology
2.2.20	Forensic Medicine
2.2.21	Anaesthesiology, resuscitation, intensive care
2.2.22	Dermatovenereology
2.2.23	Phthisiology

3. STUDENTS' COMPETENCIES RESULTING FROM THE COURCE UNIT (MODULE)	
OPK-9: the ability to assess the morphofunctional, physiological states and pathological processes in the human body to solve professional problems.	
Knowledge:	
Level 1	Normal structure of organs and systems, and their functions in a healthy body
Level 2	Structural and functional bases of diseases and pathological processes, causes, main mechanisms of development and outcomes of pathological processes, violations of organs and systems
Level 3	

Skills:	
Level 1	Analyze the physiological reactions of the body, ensuring its normal existence, and life in the conditions of illness
Level 2	Analyze the structural-functional manifestations of pathological processes, their cause and mechanism of development
Level 3	
Expertise:	
Level 1	Skills of work with a microscope, to study the morphological diagnosis of pathological conditions
Level 2	To know the terminology and skills of morphological diagnostics of the structural and functional bases of diseases and pathological processes, the causes, the main mechanisms of development and outcomes of pathological processes at the macro and microscopic level
Level 3	

Final Students' Competences

3.1	**Knowledge:**
3.1.1	the terms used in the course of pathological anatomy, and the main methods of pathoanatomical research;
3.1.2	concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of disease, nosology, principles of classification of diseases
3.1.3	essence and main regularities of general pathological processes
3.1.4	characteristic changes in internal organs in the most important human diseases
3.1.5	basics of clinical and anatomical analysis, rules for constructing a pathoanatomical diagnosis, principles of clinical and anatomical analysis of biopsy and surgical material
3.2	**Skills:**
3.2.1	substantiate the nature of the pathological process and its clinical manifestations;
3.2.2	to compare morphological and clinical manifestations of diseases at all stages of their development;
3.2.3	diagnose the causes, pathogenesis and morphogenesis of diseases, their manifestations, complications and outcomes, as well as pathomorphosis, and in case of death, the cause of death and the mechanism of dying (tanatogenesis);
3.2.4	use the knowledge gained about structural changes in pathological processes and diseases in professional communication with colleagues and patients.
3.3	**Expertise:**
3.3.1	basic information transformation technologies: text, spreadsheet editors, the technique of working on the Internet for professional activities;
3.3.2	macroscopic diagnosis of pathological processes;
3.3.3	microscopic (histological) diagnosis of pathological processes;
3.3.4	skills of clinical and anatomical analysis.

4. COURSE (MODULE) STRUCTURE AND CONTENT							
Class Code	**Subject Name /Type of Class/**	**Semester / Academic Year**	**Hours**	**Competencies**	**Literature**	**Interactive Sessions**	**Notes**
	Section 1. Damage, disorder of blood and lymph circulation						
1.1	Pathological anatomy, content, tasks, objects and methods of research. Place of pathological anatomy in medical science and public health practice. / Lec/	4	2			0	
1.2	Pathological anatomy, content, tasks, objects and methods of research. Place of pathological anatomy in medical science and public health practice. / Ind.work /	4	1			0	

1.3	Pathological anatomy, content, tasks, objects and methods of research. Place of pathological anatomy in medical science and public health practice. / Prac. /	4	2				The student must know the cytology, anatomy, physiology of man. Demonstrate skills in working with a microscope
1.4	Death. Signs of death, posthumous changes. Necrosis. Morphology of cell damage / Lec/	4	2			0	
1.5	Death. Signs of death, posthumous changes. Necrosis. Morphology of cell damage / Ind.work /	4	1			0	
1.6	Death. Signs of death, posthumous changes. Necrosis. Morphology of cell damage / Prac/	4	2			1	Presentation of the report on the topic "Apoptosis"
1.7	The concept of the human tissue (cellular) metabolism and forms of damage (alteration). The classification of the intracellular accumulations. Hereditary fermentopathy (sickness accumulation) and their significance in pathology of childhood /Lec/	4	2			0	
1.8	The concept of the human tissue (cellular) metabolism and forms of damage (alteration). The classification of the intracellular accumulations. Hereditary fermentopathy (sickness accumulation) and their significance in pathology of childhood /Prac/	4	2			2	Center for practical training, the lesson is held on the "Pirogov's Table"
1.9	The concept of the human tissue (cellular) metabolism and forms of damage (alteration). The classification of the intracellular accumulations. Hereditary fermentopathy (sickness accumulation) and their significance in pathology of childhood /Ind.work/	4	2			0	
1.10	Extracellular accumulation. Classification of extracellular accumulation. Characteristics of extracellular protein disorders. Characterization of extracellular fat accumulation. Characterization of extracellular carbohydrate accumulation. /Lec/	4	2			0	
1.11	Extracellular accumulation. Classification of extracellular accumulation. Characteristics of extracellular protein disorders. Characterization of extracellular fat accumulation. Characterization of extracellular	4	2			0	

	carbohydrate accumulation. /Prac/						
1.12	Extracellular accumulation. Classification of extracellular accumulation. Characteristics of extracellular protein disorders. Characterization of extracellular fat accumulation. Characterization of extracellular carbohydrate accumulation. /Ind.work/	4	2			0	
1.13	Pigmentations Characteristics and classification of pigments. General characteristics of metabolic pigments /Lec/	4	2			0	
1.14	Pigmentations Characteristics and classification of pigments. General characteristics of metabolic pigments /Prac/	4	2			0	
1.15	Pigmentations Characteristics and classification of pigments. General characteristics of metabolic pigments /Ind.work/	4	2			0	
1.16	Violations of the exchange of nucleoproteins, the violation of mineral metabolism. Stones. / Lec /	4	2			0	
1.17	Violations of the exchange of nucleoproteins, the violation of mineral metabolism. Stones. / Prac /	4	2			0	
1.18	Violations of the exchange of nucleoproteins, the violation of mineral metabolism. Stones. / Ind.work /	4	2			0	
1.19	Blood circulation disorder. Hyperemia: arterial and venous. Venous stasis, causes, morphology. Bleeding, hemorrhage. / Lec /	4	2			0	
1.20	Blood circulation disorder. Hyperemia: arterial and venous. Venous stasis, causes, morphology. Bleeding, hemorrhage. / Prac /	4	2			0	
1.21	Blood circulation disorder. Hyperemia: arterial and venous. Venous stasis, causes, morphology. Bleeding, hemorrhage. / Ind.work /	4	2			0	
1.22	Blood circulation disorder. Stasis. Thrombosis. Embolism. Ischemia. / Lec /	4	2			0	
1.23	Blood circulation disorder. Stasis. Thrombosis. Embolism. Ischemia. / Prac/	4	2			0	
1.24	Blood circulation disorder. Stasis. Thrombosis. Embolism. Ischemia. /Ind.work/	4	2			0	
1.25	Disturbance of lymph circulation. Violation of the content of tissue fluid. Shock. DIC syndrome.	4	2			0	

	/ Lec /						
1.26	Disturbance of lymph circulation. Violation of the content of tissue fluid. Shock. DIC syndrome. / Prac /	4	2			0	
1.27	Disturbance of lymph circulation. Violation of the content of tissue fluid. Shock. DIC syndrome. / Ind.work /	4	1			0	
1.28	Midterm examination in the discipline "Damage, disorder of blood and lymph circulation" / Ind.work /	4	1			0	
	Section 2. Inflammation. Adaptation. Compensatory-adaptive processes.						
2.1	Inflammation. The biological significance of inflammation. Classification. Exudative inflammation. Etiology, pathogenesis, clinical and anatomical forms, functional significance, outcomes. / Lec /	4	2			0	
2.2	Inflammation. The biological significance of inflammation. Classification. Exudative inflammation. Etiology, pathogenesis, clinical and anatomical forms, functional significance, outcomes. / Prac /	4	2			0	
2.3	Inflammation. The biological significance of inflammation. Classification. Exudative inflammation. Etiology, pathogenesis, clinical and anatomical forms, functional significance, outcomes. / Ind.work/						
2.4	Proliferative and granulomatous inflammation. Etiology, pathogenesis. Diseases accompanied by the formation of granulomas. / Lec /	4	2			0	
2.5	Proliferative and granulomatous inflammation. Etiology, pathogenesis. Diseases accompanied by the formation of granulomas. / Prac /	4	2			0	
2.6	Proliferative and granulomatous inflammation. Etiology, pathogenesis. Diseases accompanied by the formation of granulomas. /Ind.work /	4	2			0	
2.7	Chronic inflammation. Immune inflammation / Lec /	4	2			0	
2.8	Chronic inflammation. Immune inflammation /Prac /	4	2			0	
2.9	Chronic inflammation. Immune inflammation / Ind.work /	4	1			0	

2.10	Adaptation. Compensatory-adaptive processes. Compensatory-adaptive processes. Essence, biological and medical importance of adaptation and compensation. Phase currents. Types, morphological manifestations of hypertrophy, atrophy, hyperplasia, metaplasia and dysplasia. Value. Outcome. /Lec/	4	2			0	
2.11	Adaptation. Compensatory-adaptive processes. Compensatory-adaptive processes. Essence, biological and medical importance of adaptation and compensation. Phase currents. Types, morphological manifestations of hypertrophy, atrophy, hyperplasia, metaplasia and dysplasia. Value. Outcome. /Prac/	4	2			0	
2.12	Adaptation. Compensatory-adaptive processes. Compensatory-adaptive processes. Essence, biological and medical importance of adaptation and compensation. Phase currents. Types, morphological manifestations of hypertrophy, atrophy, hyperplasia, metaplasia and dysplasia. Value. Outcome. /Ind.work/	4	2			0	
2.13	Tissue repair. Regeneration. Definition, essence and biological significance of regeneration. Types of regeneration. Regeneration of certain tissues and organs. /Lec/	4	2			0	
2.14	Tissue repair. Regeneration. Definition, essence and biological significance of regeneration. Types of regeneration. Regeneration of certain tissues and organs. /Prac/	4	2			1	Presentation of the report on the topic
2.15	Tissue repair. Regeneration. Definition, essence and biological significance of regeneration. Types of regeneration. Regeneration of certain tissues and organs. /Ind.work/	4	2			0	
2.16	Midterm examination in the discipline “Inflammation. Adaptation. Compensatory-adaptive processes” /Ind.work/	4	2			0	
	Section 3. Tumors						
3.1	Tumors I. General oncomorphology. Classification and nomenclature of tumors. Epithelial tumors. /Lec/	4	2			0	
3.2	Tumors I. General oncomorphology. Classification and nomenclature of tumors.	4	2			2	Center for practical training, the

	Epithelial tumors. /Prac						lesson is held on the "Pirogov's Table"
3.3	Tumors I. General oncomorphology. Classification and nomenclature of tumors. Epithelial tumors. /Ind.work/	4	2			0	
3.4	Tumors II. Lung cancer, stomach cancer, breast cancer, endometrial cancer, cervical cancer, prostate cancer. / Lec /	4	2			0	
3.5	Tumors II. Lung cancer, stomach cancer, breast cancer, endometrial cancer, cervical cancer, prostate cancer. / Prac /	4	2			0	
3.6	Tumors II. Lung cancer, stomach cancer, breast cancer, endometrial cancer, cervical cancer, prostate cancer. /Ind.work /	4	2			0	
3.7	Mesenchymal tumors /Lec/	4	2			0	
3.8	Mesenchymal tumors /Prac/	4	2			0	
3.9	Mesenchymal tumors /Ind.work/	4	2			0	
3.10	Tumors IV. Melanocytic tumors. Tumors of the nervous system and brain membranes. / Lec /	4	2			0	
3.11	Tumors IV. Melanocytic tumors. Tumors of the nervous system and brain membranes. / Prac /	4	2			0	
3.12	Tumors IV. Melanocytic tumors. Tumors of the nervous system and brain membranes. / Ind.work /	4	2			0	
3.13	Midterm examination under the section "Tumors" / Ind.work /	4	2			0	
	Section 4. SISTEMIC PATHOLOGY (Part I)						
4.1	Diseases of the cardiovascular system. Atherosclerosis. Hypertension. / Lec /	5	2			0	
4.2	Diseases of the cardiovascular system. Atherosclerosis. Hypertension. / Prac /	5	2			2	The student must know the anatomy, the physiology of the cardiovascular system. Center for practical training on the "Pirogov's Table"
4.3	Diseases of the cardiovascular system. Atherosclerosis. Hypertension. / Ind.work /	5	2			0	
4.4	Coronary heart disease. Cerebrovascular diseases. / Lec /	5	2			0	
4.5	Coronary heart disease. Cerebrovascular diseases. / Prac /	5	2			0	
4.6	Coronary heart disease. Cerebrovascular diseases. / Ind.work /	5	2			0	
4.7	Rheumatic heart disease. Acquired heart diseases. Endocarditis. Myocarditis. /Lec/	5	2			0	

4.8	Rheumatic heart disease. Acquired heart diseases. Endocarditis. Myocarditis. /Prac/	5	2			0	
4.9	Rheumatic heart disease. Acquired heart diseases. Endocarditis. Myocarditis. /Ind.work/	5	2			0	
4.10	Diseases of the respiratory system. Acute pneumonia. Chronic bronchitis. / Lec /	5	2			0	
4.11	Diseases of the respiratory system. Acute pneumonia. Chronic bronchitis. /Prac /	5	2			0	The student must know the anatomy, the physiology of the respiratory organs
4.12	Diseases of the respiratory system. Acute pneumonia. Chronic bronchitis. /Ind.work /	5	2			0	
4.13	Midterm examination under the SISTEMIC PATHOLOGY (Part I) / Ind.work /	5	2			0	
	Section 5. SISTEMIC PATHOLOGY (Part II)						
5.1	Diseases of the gastrointestinal tract. Gastritis. Stomach ulcer and duodenal ulcer. Appendicitis. / Lec/	5	2			0	
5.2	Diseases of the gastrointestinal tract. Gastritis. Stomach ulcer and duodenal ulcer. Appendicitis. / Prac/						The student must know the anatomy, physiology of the gastrointestinal tract
5.3	Diseases of the gastrointestinal tract. Gastritis. Stomach ulcer and duodenal ulcer. Appendicitis. /Ind.work/	5	2			0	
5.4	Diseases of the liver. Hepatoses. Hepatitis. / Lec /	5	2			0	
5.5	Diseases of the liver. Hepatoses. Hepatitis. /Prac /	5	2			0	The student must know the anatomy, the physiology of the liver
5.6	Diseases of the liver. Hepatoses. Hepatitis. /Ind.work/						
5.7	Diseases of the liver. Cirrhosis of the liver. Tumors of the liver. / Lec /						
5.8	Diseases of the liver. Cirrhosis of the liver. Tumors of the liver. /Prac /	5	2			1	Report-presentation on the topic "Gallstone disease"

5.9	Diseases of the liver. Cirrhosis of the liver. Tumors of the liver. /Ind.work/	5	2			0	
5.10	Kidney disease. Glomerulonephritis. Nephrotic syndrome / Lec/	5	2			0	
5.11	Kidney disease. Glomerulonephritis. Nephrotic syndrome /Prac/	5	2			0	The student must know the anatomy, the physiology of the kidneys
5.12	Kidney disease. Glomerulonephritis. Nephrotic syndrome /Ind.work/	5	2			0	
5.13	Kidney disease. Pyelonephritis Acute and chronic renal failure. / Lec/	5	2			0	
5.14	Kidney disease. Pyelonephritis Acute and chronic renal failure /Prac/	5	2			1	Report-presentation
5.15	Kidney disease. Pyelonephritis Acute and chronic renal failure /Ind.work/	5	2			0	
5.16	Midterm examination under the SISTEMIC PATHOLOGY (Part II) / Ind.work /	5	3			0	
	Section 6. Infectious Diseases						
6.1	Infectious diseases. General characteristics. Features of the infectious process. Classification of infectious diseases. Sepsis / Lec /	5	2			0	
6.2	Infectious diseases. General characteristics. Features of the infectious process. Classification of infectious diseases. Sepsis /Prac/	5	2			0	
6.3	Infectious diseases. General characteristics. Features of the infectious process. Classification of infectious diseases. Sepsis /Ind.work/	5	2			0	
6.4	Tuberculosis I. / Lec /	5	2			0	
6.5	Tuberculosis I. / Prac /	5	2			0	
6.6	Tuberculosis I. Ind.work /	5	2			0	
6.7	Tuberculosis II. / Lec /	5	2			0	
6.8	Tuberculosis II. / Prac /	5	2			0	
6.9	Tuberculosis II. Ind.work /	5	2			0	
6.10	Syphilis / Lec /	5	2			0	
6.11	Syphilis / Prac /	5	2			1	Presentation on the topic "Neurosyfilis
6.12	Syphilis /Ind.work /	5	2			0	
6.13	Intestinal infections. Salmonellosis. Dysentery. Typhoid fever. Cholera. / Lec /	5	2			0	
6.14	Intestinal infections. Salmonellosis. Dysentery. Typhoid fever. Cholera. / Prac /	5	2			0	
6.15	Intestinal infections.	5	2			0	

	Salmonellosis. Dysentery. Typhoid fever. Cholera. / Ind.work /						
6.16	Diphtheria, scarlet fever, meningococcal infection. / Lec /	5	2			0	
6.17	Diphtheria, scarlet fever, meningococcal infection. / Prac/	5	2			0	
6.18	Diphtheria, scarlet fever, meningococcal infection. /Ind.work/	5	2			0	
6.19	Midterm examination under the SISTEMIC PATHOLOGY (Part III) / Ind.work /	5	2			0	
	Section 7. SISTEMIC PATHOLOGY (Part IV)						
7.1	Endocrine system diseases /Lec/	5	2			0	
7.2	Endocrine system diseases /Prac/	5	2			0	The student must know the anatomy, the physiology of the endocrine system Presentation on the topic " Goiter"
7.3	Endocrine system diseases /Ind.work/	5	2			1	
7.4	Immunopathology /Lec/	5	2			0	
7.5	Immunopathology /Prac/	5	2			0	
7.6	Immunopathology /Ind.work/	5	2			0	
7.7	Occupational diseases. Iatrogenic pathology. / Lec /	5	2			0	
7.8	Occupational diseases. Iatrogenic pathology. / Prac /	5	2			1	Presentation on the topic " Iatrogenic pathology."
7.9	Occupational diseases. Iatrogenic pathology. / Ind.work /	5	2			0	
7.10	Midterm examination under the SISTEMIC PATHOLOGY (Part IV) / Ind.work /	5	2			0	
7.11	Interim Control - Exam / Exam /	5	18			0	

5. ASSESSMENT FUND
5.1. Advancement Questions and Assignments
ADVANCEMENT QUESTIONS FOR V SEMESTER: 1 SECTION: KNOW: 1. Methods for the study of pathological anatomy. 2. The autopsy of the dead corpses as a method of studying the nature of disease, clinical and anatomical analysis. 3. Death – definition, classification, clinical and biological signs of death. 4. Biopsy, its importance for in vivo detection and dynamic study of the disease. The types of biopsy.

5. Morphogenesis of necrosis.
6. Necrosis morphological changes in tissues and organs.
7. Morphological changes in tissues during apoptosis.
8. The classification of the intracellular accumulations.
9. The classification of the intracellular accumulations depending on the prevalence of violations of either type of exchange (protein, fat, carbohydrate, mineral).
10. The classification of the intracellular accumulations according to the influence of genetic factors (acquired, genetic) and distribution process (general, local).
11. Extracellular protein accumulation: mucoid swelling, fibrinoid swelling, hyalinosis, and amyloidosis. Morphological characteristics, reasons, pathogenesis.
12. Extracellular fat accumulation: total obesity (obesity), emaciation (cachexia). Morphological characteristics, reasons, pathogenesis.
13. Extracellular carbohydrate accumulation. Morphological characteristics, reasons, pathogenesis.
14. Metabolic chromoproteids.
15. Metabolic nucleoproteins.
16. Metabolic of minerals.
17. General and local disorders of blood circulation. Classification.
18. Swelling. Causes, morphological changes in tissues and organs. The value of the outcomes.
19. Hyperemia. Arterial hyperemia. Causes, types, morphology.
20. Venous plethora: General and local, acute and chronic.
21. Anemia. Causes, types, morphology, outcomes.
22. Bleeding external and internal hemorrhage. Causes, types, morphology, outcomes, value.
23. Plasmorrhea. Causes, mechanism of development, morphological characteristics.
24. Thrombosis. Causes, mechanism of clot formation. Local and General factors of thrombosis.
25. Thrombus, disseminated intravascular coagulation. The value of thrombosis.
26. Embolism. Reasons, types, morphological characteristics, outcomes, and value of an embolism.
27. Orthograde, retrograde and paradoxical embolism. Pulmonary embolism.
28. Shock. Types of shock, morphological changes of internal organs, the value, outcomes.

2 SECTION:
1. The etiology and pathogenesis of inflammation. Humoral and nervous regulation factors, inflammation and immunity.
2. Morphology of inflammation: alteration, exudation and proliferation.
3. Acute inflammation, its types: serous, fibrinous (croupous, dipteridaceae), purulent (a phlegmon, abscess), putrefactive, hemorrhagic, catarrhal, mixed.
4. Chronic inflammation, its types: interstitial (interstitial, granulomatous, inflammation with formation of polyps and genital warts. Causes, mechanism of development, morphological characteristics, outcomes.
5/ The kinetics of granulomatosis. Causes, morphogenesis, classification of granulomas.
6. Nosological characteristics of specific granulomas in tuberculosis, syphilis, leprosy, scleroma, Sapa. The morphology of tissue reactions. Characterization of the structure of the granulomas in tuberculosis, syphilis, leprosy, scleroma and Sapa.
7. Adaptation. The definition of the concept. Classification.
8. Hypertrophy – definition, morphology, significance, outcome.
9. Atrophy – definition, morphology, significance, outcome.
10. Hyperplasia – definition, morphology, significance, outcome.
11. Metaplasia – definition, morphology, significance, outcome.
12. Dysplasia – definition, morphology, significance, outcome.
13. Regeneration. Morphogenesis of the regenerative differentiation.
14. Types of regeneration: physiological, reparative, pathological.
15. Healing – definition, concept, types, morphology, significance
16. The healing and regeneration of certain tissues and organs – connective, bone, nervous, muscle tissues, mucous membranes, and parenchymatous organs.

3 SECTION:
1. Tumor. The definition of the concept. The etiology of tumors. The modern theory of tumor growth.
2. Morphogenesis and histogenesis of tumors.
3. The structure of the tumor and the properties of tumor cells. Morphological manifestations of the tumor.
4. Benign or malignant tumor. Criteria of malignancy.
5. Metastasis, types, patterns. The concept of relapse. Secondary changes in tumors.
6. Modern classification of tumors. The principles of its construction.
7. Epithelial tumors without specific localization (organo nonspecific) benign and malignant – definition, types, morphology, significance, outcomes.
8. Cancer, its types, morphology, significance, outcomes.
9. Mesenchymal tumors benign and malignant. Sarcoma, its types. Special types of mesenchymal tumors.
10. Melanocytic tumors is benign or malignant. Nevus, melanoma.
11. Tumor in children. Classification, morphology.

ADVANCEMENT QUESTIONS FOR VI SEMESTER:
4 SECTION:

KNOW:
1. Diseases of the cardiovascular system. Atherosclerosis: definition, etiology, pathogenesis, morphogenesis.
2. Diseases of the cardiovascular system. Atherosclerosis: definition, etiology, pathogenesis, clinical and anatomical forms.
3. Diseases of the cardiovascular system. Ischemic heart disease: definition, etiology, classification. Acute ischemic heart disease.
4. Diseases of the cardiovascular system. Ischemic heart disease: definition, etiology, classification. Chronic ischemic heart disease.
5. Diseases of the cardiovascular system. Hypertensive disease: definition, etiology, symptomatic arterial hypertension.
6. Diseases of the cardiovascular system. Hypertensive disease: definition, etiology, clinical morphological forms.
7. Cerebrovascular diseases: definition, etiology and pathogenesis, morphogenesis.
8. Rheumatic diseases. General Characteristics, Classification
9. Rheumatic diseases. Rheumatism: etiology, pathogenesis, clinical anatomical forms. Complications, causes of death.
10. Rheumatic diseases. Rheumatic endocarditis: clinical and anatomical forms, morphology, complications, outcomes
11. Rheumatic diseases. Rheumatism: rheumatic myocarditis, clinical and morphological forms, morphology, complications, outcomes, causes of death
12. Rheumatic diseases. Rheumatism: rheumatic pericarditis, clinical-anatomical forms, morphology, complications, outcomes, causes of death.
14. Lobar pneumonia, concept definition, etiology, pathogenesis, morphogenesis, according to Zinserling, morphology, complications, outcomes, causes of death of patients.
15. Local pneumonia. Definition of the concept, clinical-anatomical essence, classification, etiology, pathogenesis. Differential diagnosis of staphylococcal, streptococcal pneumonia. Complications, outcomes, causes of death of patients.

5 SECTION:
1. Diseases of the digestive tract. Acute and chronic gastritis: definition, etiology, pathogenesis, classification, morphology.
2. Diseases of the digestive tract. Peptic ulcer of stomach and duodenum: definition, etiology, pathogenesis, patanatomy.
3. Diseases of the digestive tract. Peptic ulcer of stomach and duodenum: definition, etiology, pathogenesis, complications.
4. Diseases of the digestive tract. Appendicitis: definition, etiology, pathogenetic theories, pathology of acute and chronic forms, complications.
5. Diseases of the liver. Hepatitis: definition, etiology, pathogenesis, patanatomy of acute and chronic forms, outcomes.
6. Diseases of the liver. Hepatosis: Definition. Toxic dystrophy of the liver.
7. Diseases of the liver. Hepatosis: Definition. Fatty hepatosis.
8. Diseases of the liver. Cirrhosis: definition, etiology, classification, morphogenesis, morphology. Signs of portal hypertension. Complications and causes of death.
9. Diseases of the liver. Cirrhosis: definition, morphogenetic types of cirrhosis, signs of hepatocellular insufficiency. Complications and causes of death.
10. Kidney disease. Glomerulopathies: glomerulonephritis. Definition, etiology, pathogenesis, classification by topography and morphology.
11. Kidney disease. Glomerulopathies: glomerulonephritis. Definition, etiology, pathogenesis, classification depending on the nature of the course.
12. Kidney disease. Tubulopathy: acute renal failure. Definition, etiology, pathogenesis, patanatomy. Complications, outcomes.
13. Kidney disease. Chronic renal failure: definition, etiology, morphology, functional significance.
14. Kidney disease. Interstitial diseases of the kidney: pyelonephritis. Definition, etiology, pathogenesis, pathology of acute and chronic forms, complications, outcomes.

6 SECTION:
1. Infectious diseases: classification, clinical and morphological differences from noncommunicable diseases.
2. Tuberculosis. Primary tuberculosis complex: localization, morphology, functional significance, outcomes.
3. Tuberculosis. Primary tuberculosis: variants of primary tuberculosis complex, the functional significance of the Gona foci.
4. Tuberculosis. Hematogenic pulmonary tuberculosis: course, morphology.
5. Chronic disseminated tuberculosis of the lung: morphology.
6. Hematogenous tuberculosis with extrapulmonary (organ) lesions: variants, complications, outcomes

7. Secondary pulmonary tuberculosis: phase forms, Fibrous-cavernous tuberculosis: localization, morphology. Causes of death of patients.
8. Infectious diseases. Sepsis: definition, clinical and morphological distinctive features of sepsis from other infectious diseases
9. Infectious diseases. Sepsis + septic bacterial endocarditis. Definition, etiology, pathogenesis, morphology, outcomes, causes of death
10. Infectious diseases. Sepsis + septicemia. Definition, pathogenesis, morphology, outcomes, causes of death
11. Infectious diseases. Sepsis + septicopyemia. Definition, pathogenesis, morphology, outcomes, causes of death
13. Infectious diseases. Syphilis: definition, etiology, pathogenesis, classification
14. Infectious diseases. Syphilis: primary period, pathogenesis, morphology, outcomes, functional significance (epidemiology)
15. Infectious diseases. Syphilis: secondary period, pathogenesis, morphology, outcomes, functional significance (epidemiology)
16. Infectious diseases. Syphilis: Tertiary period, pathogenesis, morphology, outcomes, functional significance

(epidemiology)
17. Diphtheria: definition, etiology, pathogenesis, clinical and morphological forms, outcomes, complications, causes of death
18. Scarlet fever: definition, etiology, pathogenesis, periods of the disease, morphology, complications, causes of death
19. Meningococcal infection: definition, etiology, pathogenesis, clinical- morphological forms, morphology, complications, causes of death
20. Particularly dangerous infections. Definition of the concept. Plague: etiology, pathogenesis, clinical morphological forms, morphology, causes of death
21. Particularly dangerous infections. Smallpox: etiology, pathogenesis, clinical morphological forms, morphology, causes of death
22. Particularly dangerous infections. Anthrax: etiology, pathogenesis, clinical morphological forms, morphology, causes of death
23. Especially dangerous infections. Cholera: etiology, pathogenesis, clinical and morphological forms, patanatomy, complications, causes of death
24. Intestinal infections. Salmonellosis: etiology, pathogenesis, clinical morphological forms, morphology, complications, causes of death
25. Intestinal infections. Dysentery: etiology, pathogenesis, clinical morphological forms, morphology, complications, causes of death
26. Intestinal infections. Typhoid fever: etiology, pathogenesis, clinical morphological forms, morphology, complications, causes of death
27. Viral infections. Features. Influenza: etiology, pathogenesis, clinical and morphological forms downstream, complications, outcomes, causes of death
28. Viral infections. Parainfluenza, PC infection, adenovirus infection: etiology, pathogenesis, complications, causes of death

7 SECTION:
1. Endocrine diseases. Diabetes mellitus: definition, pathomorphogenesis. Macro-microangiopathies, complications, outcomes
2. Diseases of the thyroid gland. Definition, pathomorphogenesis, complications, outcomes.
3. Immune pathology. Definition, classification, pathomorphogenesis, complications, functional significance, outcomes
4. Occupational diseases. Definition of the concept, flow, functional significance, outcomes.
5. Iatrogenic pathology. Definition of the concept, flow, functional significance, outcomes.

LEARNING OUTCOME REQUIREMENTS:
From the given list of drugs, it is necessary to describe the scheme of the microscopic preparation according to the following points:
1. To recognize pathomorphological changes in organs in the most important human diseases.
2. Describe the morphological changes of the micropreparations studied
3. To formulate the conclusion about pathological process on the totality of pathomorphological changes.
4. To give a comparative evaluation of morphological changes in various forms of the pathological process.
5. Tell about the mechanism of development of morphological changes that arise in organs and tissues in the pathological process, its importance for the organism.
6. Skills of microscopy of pathohistological preparations.
7. Skills of sketching pathogistological drugs

LIST OF MICROSCOPE SLIDES
1. GENERAL PATHOLOGY
Caseous necrosis of the lymph node
Ischemic infarction of the kidney
Ischemic acute tubule necrosis
Fatty degeneration of the myocardium
Fatty liver
Hyaline droplet degeneration of the tubular epithelium of the kidney
Hyalinosis of the ovary
Amyloidosis of kidney
Obesity of the heart
Gouty bump
Melanosis of the skin
Brown atrophy of the myocardium
Petechial hemorrhages in the brain
Brown indurate of lung
Nutmeg liver
Fresh blood clot artery
Organized thrombus of the pulmonary artery
Fibrinous pericarditis
Lobar pneumonia
Embolic pyogenic nephritis
Miliary tuberculosis of lung

Liver alveococcosis
Cardiac hypertrophy
Hyperplasia of the endometrium
Granulation tissue
Papilloma of skin
Metastasis of cancer to the liver
Adenocarcinoma of the stomach
Squamous cell carcinoma
Basal cell carcinoma
Cavernous hemangioma of the liver
Undifferentiated sarcoma
Leiomyoma of uterus

2. SISTEMIC PATHOLOGY

Atherosclerosis of aorta
Cardiac hypertrophy
Acute myocardial infarction
Postinfarction cardiosclerosis
Rheumatic myocarditis
Lobar pneumonia
Focal pneumonia
Lung carnification
Pneumocystis pneumonia
Emphysema
Chronic lung abscess
Miliary tuberculosis of lungs
Tuberculoma
Caseous pneumonia
sophageal cancer
Chronic atrophic gastritis
Chronic stomach ulcer
Stomach cancer
Chronic hepatitis
Portal cirrhosis
Chronic colitis
Chronic cholecystitis
Colon cancer with metastasis in the lymph node
Mesangiocapillary glomerulonephritis
Nephrosclerosis
Necrosis of the epithelium of the convoluted tubules of the kidney
Clear cell kidney cancer
Prostatic hyperplasia
Chronic pyelonephritis
Colloid goiter
Goiter Hashimoto
Pancreas in diabetes
Diabetic glomerulosclerosis
Ectropion
Endometrial hyperplasia
Endometrial cancer
Leiomyoma of uterus
Choriocarcinoma
Proliferating molar pregnancy
Stromal sarcoma of the uterus
Serous cystadenoma of the ovary
Ovarian cancer
Breast fibroadenoma
Callus
Rheumatoid arthritis
Osteoporosis
Gout
Fibrous dysplasia
Suppurative myositis
Rhabdomyoma
Tuberculous osteomyelitis
Tuberculous synovitis
Brain edema
Intracerebral hemorrhage

Cerebral arteriolar hyalinosis
Acute purulent meningitis
Bacterial encephalitis
Glioblastoma

5.2. Course Papers Themes

Course paper is not required.

5.3. Assessment Fund

Frontal survey. The list of questions on all current topics in paragraph 5.1.

Presentation themes:
1. Death. Necrosis. The concept of apoptosis.
2. Hereditary proteinaceous dystrophies
3. Hereditary fatty degenerations
4. Hereditary carbohydrate dystrophies
5. Productive inflammation with the formation of polyps and genital warts
6. Productive inflammation around animal parasites and foreign bodies
7. Regeneration of individual organs
8. Gallstone disease
9. Urolithiasis
10. Neurosyphilis
11. Occupational diseases caused by exposure to chemical production factors.
12. Prof. diseases caused by exposure to industrial dust (pneumoconiosis).
13. Prof. disease caused by physical factors.
14. Prof. diseases caused by overexertion.
15. Prof. diseases caused by biological factors.
16. Diseases arising in connection with careless statements of doctors or other representatives of medical personnel that have had an effect on the patient's psyche.
17. Pathological conditions and diseases caused by diagnostic, preventive and curative actions
18. Alcoholic illness. Defeat of the cardiovascular system
19. Alcoholic illness. Disorders of the pancreas and liver
20. Alcoholic illness. Neurological disorders

Abstracts are required when practicing missed lectures and practical exercises on relevant topics

Test questions are in ANNEX 4
Situational challenges for midterm examination control in ANNEX 5

5.4. List of Assessment Tools

Front-line survey
Description of micropreparations according to a given scheme
Test
Situational challenge
Report-presentation
abstract
(Scales of assessment for all types of assessment tools in ANNEX 7)

6. COURSE (MODULE) METHODOLOGICAL AND INFORMATIONAL SUPPORT

6.1 Recommended Reading

6.1.1 Required Reading List

	Authors, Compliers	Title	Book publisher, Year
RR1.1	Kumar, Cotran, Robbins.	Basic pathology. 8-th Edition,	2007
RR.1.2	Walter and Izrael,	General pathology. 7-th Edition,	1996
RR1.3	Harsh Mohan,	Textbook of Pathology. 6-th Edition,	2010
RR.1.4	Kumar, Abbas, Aste	Pathologic basic of disease. 9-th Edition	2015

6.1.2 Advanced Reading

	Authors, Compliers	Title	Book publisher, Year

AR1.1	J. Brown,	Pre Test Pathology Usmle step1. 10-th Edition,	2002
AR1.2	Robin A. Cooke., Br. Stewart	Color atlas of Anatomical Pathology. 3-rd Edition	2004

6.1.3 Guidance Papers			
	Authors, Compliers	Title	Book publisher, Year

6.2 Online Resources
CD/ Pathology2016 OMI-Cleveland Seminar. (Brest pathology, Autopsy Pathology, Neuropathology, Genitourinary, Non-gynecologic Cytology)
- CD/ Pathology2015 OMI-Cleveland Seminar (Endometrial Hyperplasia, Endometrial Adenocarcinoma, Thyroid cytology, Barrett's Esophagus, Lung Cancer diagnosis from bronchoscopy …)
- CD/ Pathology2014 OMI-Cleveland Seminar (Melanocytic Tumors, Epidermal and Adnexal Tumors,Germ Cell Tumors of Adult Testis, Brest: Lobular Neoplasia, Adult Renal Tumors)
- CD/ Pathology2008 OMI-Cleveland Seminar (Follicular Thyroid Tumor, Myxoid Lesions of Soft Tissue, Fibroblastic and Myofibroblastic Lesions of Soft Tissue, Benign Mimickers of Prostate Cancer, Liver Histology Review and Patterns - based Approach to Liver, Molecular Genetics of Bone, Basic Tumor Genes...)

6.3. List of Information and Education Technologies	
6.3.1 Competence-based Educational Technologies	
6.3.1.1	Traditional educational technologies - lectures, practical classes of reproductive type, including independent work of students, with the description of macro preparations and with the drawing of micro-preparations under the supervision of the teacher, focused primarily on communicating knowledge and methods of actions passed on to students in ready-made form and intended for reproducing the assimilation and analysis of specific samples.
6.3.1.2	Innovative educational technologies - classes in an interactive form that form the system thinking and the ability to generate ideas when solving various creative tasks. These include electronic texts of lectures with presentations, compilation of comparative tables of physiological norms to pathological processes, reflecting the structure, functions of cells, tissues, organs, the body as a whole
6.3.1.3	Information educational technologies - independent use of the student computer equipment and Internet resources for the implementation of practical tasks and independent work.
6.3.2 List of Information Reference Systems and Software	

7. COURSE (MODULE) LOGISTICS	
7.1	Lecture room for 100 seats, classrooms (for 64 seats) - l. Tolstoy street 102/5
7.2	Equipment: Microscopes
7.3	Training facilities: Multimedia complex (laptop, projector) 2 personal computers with a monitor, connection to the Internet. Demonstration materials: 300 macro preparations and 1000 micron preparations, 1500 tables, multimedia presentations. Training boards; Audio system
7.4	Laboratory of "Experimental modeling of pathological processes" - an audience 2.9 st. L. Tolstoy 1 A. Equipment: refrigerator, thermostat, distiller, laboratory scales, microscope, electrocardiograph, drying cabinet, a set of instruments (surgical scissors, different tweezers, forceps, clamps, etc.), a set of chemical containers (test tubes, flasks, pipettes and etc.), plaques for fixation of animals, pulse oximeter, pressure chamber, glucometer, flame photometer, coagulograph, thermostat, coagulometer.
7.5	Center for Integrative and Practical Training - Alamedin-1, ul. Zvenigorodskaya 31/5. Equipment of the center: the room of engineering personnel (Operator's room). The hall for training practical skills, with a set of simulation dummies in the amount of 63 pcs.
7.6	Hardware-software complex "Interactive anatomical table" Pirogov ", working in three modes: 1)" View "module - spatial orientation of the 3D model of a person; 2) "Comparisons" module - selection of objects for comparison (norm, pathology, preferences); 3) the module "Test knowledge" - creating your own tests (7 types of questions, use of pre-installed tests)

8. COURSE (MODULE) PROFICIENCY METHODICAL GLUIDELINES (FOR STUDENT)
DISCIPLINE PLANNING SHEET IN Annex 2

MODULAR CONTROL ON DISCIPLINE INCLUDES:
1 Formative assessment.: the assimilation of educational material in classroom lectures (lectures, practical, including visits and activities) and the fulfillment of mandatory tasks for independent work
2. Midterm examination: checking the completeness of knowledge and skills on the material of the module as a whole. The execution of the modular control tasks is carried out in written form and is an obligatory component of the modular control. The completed documented part of the academic discipline (6 semester - examination)

FORMATIVE ASSESMENT: BASIC REQUIREMENTS
To understand the material and its qualitative assimilation, the following sequence of actions is recommended:
1. After listening to the lecture and finishing the training sessions, in preparation for the next day's classes, you must first review and consider the text of the lecture.
2. Within a week, choose the time to work with the recommended literature.
3. When preparing for the next day's practical exercises, you must first read the basic concepts and approaches on the topic of the homework assignment. When carrying out a task, you first need to understand that it requires you, what theoretical material you need to use, and outline a solution plan.
4. Control over mastering by the students of the material of the curriculum of the discipline is carried out systematically by the teacher of the department and is reflected in the teacher's journal in points. A student who has received an unsatisfactory assessment of the current material is required to prepare this section and answer it to the teacher in an individual interview. In the case of a front-line poll, an unsatisfactory rating should be worked out within a month from the date it was received.
5. “Make up” classes
Development of lectures:
- if student misses a class he has to t provide a summary of the lecture and an abstract in an amount of 6-10 pages of handwritten text on the topic of the missed lecture
- answer additional questions about the missed topic
Practical training:
- The tests are conducted according to the schedule of the department coordinated with the dean's office.
- missed classes should be worked out within 10 days from the date of the pass, no more than one lesson per day is practiced.
- a student who has not completed a pass in a timely manner is allowed to continue his studies only if he has permission from the dean or his deputy in writing. It is not permitted to eliminate students who are poorly prepared for these studies from the next practical lesson.
In exceptional cases (participation in interuniversity conferences, competitions, olympiads, duty, etc.), the dean and his deputy may, in agreement with the department, make student free from the class.

METHODOLOGICAL RECOMMENDATIONS FOR INDEPENDENT EXTERNAL AUDIENCE OF STUDENTS ON THE STUDY OF THEORETICAL BASES OF DISCIPLINE PATHOLOGICAL ANATOMY
The study of the theoretical part of the disciplines is designed not only to deepen and consolidate the knowledge gained in the classroom, but also to develop students' creative skills, initiative and organize their time
Self-study in the disciplines includes:
- reading by the of recommended literature and assimilation of the theoretical material of the discipline;
- acquaintance with professional Internet sources;
- preparation for various forms of control (tests, situational tasks);
- preparation and writing of reports;
Planning the time required for the study of disciplines, students are best to carry out the entire semester, while providing for a regular repetition of the material.
The material summarized in the lectures should be regularly studied and supplemented with information from other sources of literature that are presented not only in the discipline program but also in periodicals.
When studying the discipline, it is necessary to read the recommended literature for each topic and to draw up a brief outline of the main provisions, terms, information that require memorization and are fundamental in this topic for mastering the subsequent topics of the course.
To increase knowledge of the discipline, it is recommended to use Internet resources; conduct searches in various systems and use the materials of sites recommended by the teacher.
When preparing for tests and solving situational problems, it is necessary to read the relevant pages of the main textbook. It is also desirable to read additional literature.
When doing independent work on writing a report, the student is required: read the theoretical material in the recommended literature, periodicals, on Internet sites; creatively revise the material studied and submit it for report in the form of a report, illustrated with diagrams, diagrams, photographs and drawings.
The texts of the report should be presented clearly, in a simple and clear language.

METHODOLOGICAL RECOMMENDATIONS FOR THE INDEPENDENT EXTERNAL AUDIENCE OF STUDENTS ON THE COMPOSITION OF THE ANNEX 6

SCHEME FOR MICROSCOPIC DESCRIPTION OF THE PREPARATION
1. Name the tissue or organ in the micropreparation
2. Define the criteria for the process at the cellular level;
4. Bound and sequentially summarize the findings in a histological diagnosis;

5. Explain the mechanism of the development of the process and evaluate its functional significance.
The algorithm of students' actions should be as follows:
- Viewing a microscope with a small magnification of a microscope
has the purpose:
a) Investigation of the entire area of the slice by moving it along the steps;
b) Determination of the method of coloring the preparation;
c) Determination of the normal structures of the organ, tissue;
d) Identification of the localization and nature of the main structural changes in the organ and tissue;
e) Preliminary diagnosis of the process based on the summation of the obtained data
- View the drug with a large magnification of the microscope
has the purpose:
a) Detailed review of all components of the body with structural changes;
b) The final diagnosis of the pathological process.

RECOMMENDATIONS TO STUDENTS PREPARING FOR REPORT
1. Choosing a theme
2. Preparation of the report plan
3. Working with recommended reading and educational literature.

Main literature.

1. Kumar, Robbins, Cotran. Pathologic basis of disease. 8 /e. New Delhi. -2007.
2. Harsh Mohan. Textbook of pathology.6/e.New Delhi.-2010.
3. Pathology notes. Dr.Goljan. General path.N.Y.-2001.
4. Walter J.B., Talbot I.C. General pathology . 7 /e.N.Y.-1996.
5. Kumar, Abbas, Aste. Pathologic basic of disease. 9-th Edition. 2015

4. Working with Internet resources
5. Writing text, according to the plan
6. Tutorial instruction
7. Registration of the manuscript
8. Presenting a paper
9. Answers to questions

METHODICAL RECOMMENDATIONS FOR CREATING PRESENTATIONS:
- this is a kind of independent work of students on the creation of visual information aids, made with the help of multimedia computer program PowerPoint.
This type of work requires coordination of the student's skills in collecting, organizing, processing information, processing it in the form of a collection of materials that briefly reflect the main issues of the topic being studied, in electronic form. That is, the creation of presentation materials expands the methods and means of processing and presentation of educational information, forms students' computer skills.
Presentations are prepared by the student in the form of slides using Microsoft PowerPoint.
The role of the student:
• study the materials of the topic, highlighting the main and secondary;
• establish a logical link between the elements of the topic;
• present the characteristics of the elements in a concise form;
• Select reference signals to accentuate the main information and display in the work structure;
• formalize the work and provide it by the deadline.
Criteria for evaluation:
• the content of the topic;
• Correct structuring of information;
• the presence of a logical connection of the information provided;
• aesthetic appearance, its compliance with requirements;
• the work is submitted on time

METHODICAL RECOMMENDATIONS ON THE IMPLEMENTATION OF ABSTRACTS:
The abstract provides for in-depth study of the discipline, promotes the development of skills of independent work with literary sources.
Abstract - a summary of the written content of scientific work on the topic. This is an independent research work, where the student reveals the essence of the problem being studied with elements of analysis on the topic of the essay. He brings different points of view, as well as his own views on the problems of the topic of the essay. The content of the abstract should be logical, the presentation of the material should be problem-thematic.

REQUIREMENTS FOR REGISTRATION:
The volume of the abstract can fluctuate within 15-20 printed pages. Main sections: table of contents (plan), introduction, main content, conclusion, list of literature.
The abstract should contain the following sections:
- title page with the indication: the name of the university, the department, the topic of the abstract, the author's full name

and the full name of the teacher.
- introduction, relevance of the topic.
main section.
- conclusion (analysis of the results of literary search); conclusions.
- a list of literature sources must have at least 10 bibliographic names, including network resources
Textual part of the abstract is made out on the sheet of the following format:
- Spacing from the top - 2 cm; the left margin is 3 cm; right spacing - 1.5 cm; the indentation from below is 2.5 cm;
- text font: Times New Roman, font height - 14, space - 1.5;
- page numbering - from the bottom of the page. On the first page the number is not set.
The essay should be performed competently in accordance with the culture of presentation. There must necessarily be references to the literature used, including periodic literature in the last 5 years.

CRITERIA OF ABSTRACT EVALUATION:
- Relevance of the research topic;
- the content of the topic;
- depth of material processing;
- the correctness and completeness of the development of the questions posed;
- the importance of conclusions for further practical activities;
- correctness and completeness of the use of literature;
- compliance of the abstract with the standard;
- the quality of the message and the answers to questions when defending the essay.

BASIC REQUIREMENTS TO MIDPOINT ASSESMENT:
The midpoint assessment contains a task in the form of two situational tasks.
Methodical recommendations for solving situational problems:
1. Carefully read the condition of the problem
2. To pay attention to the revealed pathology-descriptive signs of specific changes in organs
3. Carefully read the questions to this task
4. Consider, solve and write down the answer on all issues

EXAMPLE OF SOLUTION FOR SITUATION PROBLEM:
At the autopsy of a patient who died of chronic renal insufficiency, heart changes were found: dull heart leaves, epicardium with gray overlays in the form of easily removable films. Epicardium is full-blooded, with an abundance of pinpoint hemorrhages.
1) Diagnose the pathological process in the serous membrane of the heart
2) Give a figurative name for the heart.
3) Specify a kind of inflammation
4) Which auscultative sign is characteristic for this lesion
5) Indicate the options for a favorable outcome of the process.
Answer:
1. Fibrinous pericarditis
2. "Hairy heart"
3. Exudative inflammation
4. Pericardium friction noise
5. Resorption of fibrin