Educational Institution "Royal Metropolitan University"

Department "Morphological and Fundamental disciplines"

SYLLABUS

in the discipline **"Pathological physiology"**
for students of specialty 560001 "General Medicine"

Form of study	full-time
Course	2
Semester	3,4
Zachet	3
Exam	4
Total credits according to the curriculum	6
Total hours according to the curriculum	180
Lectures	36
Practical classes	54
Independent work	60

Syllabus developer:

Abdukarimova E.E.

Reviewed and approved at a meeting of the Department of Fundamental Disciplines

Protocol No. 1 from "02" 09 2025.

Head of the department Jalilova A.A.

(signature)

Bishkek 2025

Name and complexity of the discipline.

Course	Semester	Weeks	Total academic hours		Number of hours for independent work		Total hours	Number of modules
			Lecture	Practical classes	SIW	SIWT		
2	3	18	18	18	12	12	60	2
2	4	18	18	36	18	18	90	2

Course Annotation: Pathological Physiology

Overview: Pathological physiology studies the causes, development, and outcomes of pathological processes. This discipline serves both the theory and practice of medicine. The theoretical and scientific knowledge in pathological physiology is most comprehensively revealed through the study of general pathological processes and diseases, which is the focus of the course on general pathology. The clinical and applied significance of pathological physiology lies in examining the etiological foundations of various human diseases, their specific features, complications, and outcomes. This aspect is covered in the course on private pathological physiology.

Content and Methods: The subject of pathological physiology is based on the synthesis of scientific material from the perspectives of philosophy, medicine, biology, genetics, immunology, molecular biology, chemistry, and physics. It employs modern targeted functional-diagnostic research methods (biochemical, biophysical, pathochemical, immunological, electrophysiological) and experimental modeling of diseases and pathological processes on living organisms at various levels of organization (molecular, cellular, tissue, organ, systemic, organismal).

Goals and Objectives: The goal of the course is to study the etiology, pathogenesis, and functional foundations of pathological processes, including acquired, congenital, and hereditary diseases, their complications, outcomes, and causes of death, to utilize this knowledge in clinical practice and the work of a physician.

Key objectives include:

- Studying the general patterns of specific mechanisms underlying the resistance of the organism and the occurrence, development, and conclusion of pathological processes and diseases.
- Exploring typical pathological processes (stereotypical combinations of phenomena), the varied combinations of which define the clinical picture of human diseases.
- Mastering the mechanisms of the organism’s adaptation and compensation in response to pathogenic factors and changing environmental conditions.

- Analyzing changes in diseases that arise due to shifting life conditions and treatments (pathomorphosis), as well as various manipulations (pathology of treatment).
- Based on theoretical and applied knowledge, fostering the development of a physician's thinking—teaching students not only contemporary knowledge but also how to apply this knowledge to logically organize the chain of studied phenomena.

Placement within Educational Structure: This discipline is part of the mandatory curriculum for professional training.

- **Prerequisites:** Normal physiology, biology, medical genetics, histology, microbiology.
- **Post-requisites:** Fundamentals of internal diseases, pediatric diseases, infectious diseases, cardiology, and other clinical disciplines.

Planned results of mastering the academic discipline

After mastering the discipline "Pathological physiology" the student:

Will know:

- the terms used in the course of pathological physiology and the main methods of functional research.
- the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of disease, nosology, and the principles of disease classification.
- the essence and main patterns of general pathological processes.
- characteristic changes in internal organs associated with major human diseases.

Will be able to use:

- acquired knowledge of structural and functional changes in pathological processes and diseases in subsequent clinical studies.
- knowledge to determine functional changes in organs and tissues during general pathological processes and various diseases
- diagnose the causes, pathogenesis, and morphogenesis of diseases, their manifestations, complications, and outcomes, as well as pathomorphosis.

Will be able to analyze:

- to apply the rules for constructing a diagnosis and principles of clinical analysis.
- able to determine functional changes in organs and tissues during general pathological processes and various diseases (diagnosis of macroscopic preparations).
- the links of pathological processes and justify medical intervention.

- macroscopic and microscopic (histological) diagnosis of pathological processes.
- clinical, laboratory, experimental, and other data, formulating conclusions about the most likely causes and mechanisms of pathological processes (diseases).

Course Title

№	Course Title	year	semester	Number of Weeks	Number of Credits	Number of Academic Hours		Hours for Independent Work	Total	Type of final control
						lectures	practice			
1	Pathological phisiology	2	3	18	2	18	18	24	60	zachet
2	Pathological phisiology	2	4	18	3	18	36	36	90	Exam

Contents of the academic discipline

3 semester

№	Name chapters and topics of discipline (lectures and practical classes)	Auditory Lesson		Total hours for classroom work	Used educational technologies, methods and methods of teaching	Forms of current and
		lecture	practice			
1	Introduction to Pathological Physiology					
2	**Cell Injury:** Clinical causes of irreversible and reversible cell damage. **Role of Free Radicals. Apoptosis compared to Necrosis and Types of Necrosis with Examples.**					
3	**Circulatory Disorders 1: Arterial Hyperemia, Venous Hyperemia, Ischemia, Pathogenesis**					

4	**Circulatory Disorders 2:** Thrombosis, Embolism, Tromboembolism					
5	**Acute Inflammation.** Vascular and cellular changes and chemical mediators of acute inflammation. Transudate and Exudate. Types of Chronic Inflammation (Simple and Granulomatous) with Clinical Examples					
	Module 1					
6	**Clinical Aspects of Cellular Adaptations.** Atrophy, Hypertrophy, Hyperplasia, Metaplasia, Dysplasia					
7	**Tumors. General Pathology.** Nomenclature with Clinical Examples of Benign and Malignant Tumors. Definition of Proto-oncogenes and Oncogenes with Clinical Examples					
8	**Genetic Diseases 1** (Down Syndrome, Turner Syndrome Klinefelter Syndrome, Ehlers-Danlos Syndrome, Marfan Syndrome).					
9	**Immunopathology** (Congenital and Acquired Immunity. Active and Passive Immunity, Hypersensitivity Reaction, Graft-versus-Host Disease).					
	Module 2					
	Zachot					
	Total hours					

4 semester

№	Name chapters and topics of discipline (lectures and practical classes)	Auditory Lesson		Total hours for classroom work	Used educational technologies, methods and methods of teaching	Forms of current and border control
		lecture	practice			
1	**Hypertensive Disease:** Types of Primary and Secondary Hypertension and Vascular Changes in Hypertensive Disease.					
2	**Atherosclerosis:** Etiology, Pathogenesis, and Complications of Atherosclerosis. Differentiation between Atherosclerosis, Monckeberg's Sclerosis, Medial Calcific Sclerosis, and Arteriolosclerosis.					
3	**Rheumatism or Rheumatic Fever:** Etiology, Pathogenesis, Morphological and Clinical Features. Consequences of Rheumatic Fever.					
4	**Heart Defects:** Key Features of Tetralogy of Fallot and Coarctation of the Aorta. Valvular Heart Defects and Mitral Valve Prolapse.					
5	**Acute Pneumonia:** Etiology, Pathogenesis, Morphology, and Clinical Features, Complications, and Clinical Diagnosis of Acute and Chronic Pneumonia, including Atypical Pneumo					
6	**Bronchial Asthma:** Etiology, Pathogenesis, Morphology, Clinical Features, and Diagnosis of Bronchial Asthma.					
7	**Disorders Related to Airflow Obstruction:** Etiology, Pathogenesis, Morphology, Clinical Features, and Diagnosis:					

	Chronic Obstructive Pulmonary Disease.					
8	**Gastrointestinal Diseases:** Gastritis: Predisposing Factors, Pathogenesis, Morphological and Clinical Features of Acute and Chronic Gastritis. Predisposing Factors, Pathogenesis, Morphological and Clinical Features of Acute and Chronic Peptic Ulcer Disease.					
9	**Liver Diseases:** Types of Jaundice Considering Causes, Clinical Features, and Laboratory Diagnosis. Causes, Pathogenesis, and Complications of Liver Cirrhosis. Neonatal Hepatitis.					
	Module 1					
10	**Kidney Diseases:** Etiology, Pathogenesis, Clinical Features, and Complications of Azotemia, Uremia, Acute Kidney Failure, and Chronic Kidney Failure. **Glomerulonephritis** and its Classification. Nephrotic and Nephritic Syndrome. Acute and Chronic Pyelonephritis.					
12	**Endocrine Diseases:** Diabetes Mellitus: Type 1 and Type 2, Pathogenesis, Morphology, Clinical Features, Laboratory Diagnosis, and Complications.					
13	**Gynecological Diseases:** Causes, Routes of Transmission, and Methods of Diagnosis. **Sexually Transmitted Diseases:** Microorganisms, Routes of Infection, Pathogenesis, and Diagnostic Methods.					

14	**Lung Cancer:** Classification, Etiology, Pathogenesis, and Clinical Features of Various Lung Tumors.					
15	**Infectious Diseases:** Etiology, Pathogenesis, and Clinical Features, Clinical Diagnosis of Pulmonary Tuberculosis.					
16	**Intestinal Infections:** Etiology and Treatment of Acute and Chronic Diarrhea (Food Poisoning), Cholera, Dysentery, Botulism.					
17	**Acute Respiratory Infections:** COVID-19.					
18	**Especially Dangerous Infections:** Tropical Infections (Malaria), Sepsis, Pediatric Bacterial Infections.					
	Module 2					
	Exam					
	Total hours					

Methodological recommendations for preparing for practical classes.

Practical classes are held after lectures and are explanatory, generalizing and reinforcing in nature. They can be carried out not only in the classroom, but also outside the educational institution.

During practical classes, students perceive and comprehend new educational material. Practical classes are systematic, regularly following each lecture or two or three lectures.

Practical classes are carried out according to the schedule of the educational process and independent work of students in the disciplines.

When preparing for practical classes, it is necessary to study in advance the methodological recommendations for its implementation. Pay attention to the purpose of the lesson, the main questions to prepare for the lesson, and the content of the topic of the lesson.

Before each practical lesson, the student studies the seminar lesson plan with a list of topics and questions, a list of references and homework on the material presented at the seminar. The following scheme of preparation for the seminar lesson is recommended for the student:

1. work through lecture notes;

2. read the basic and additional literature recommended for the section being studied;
3. answer the questions of the seminar lesson plan;
4. study the topic and select literature for writing abstracts, reports, etc.

Plan for organizing student independent work

Thematic plan for student independent work (SWS)

№	**Theme of SIW**	**Task for SIW**	Litreture	Deadline (weeks)	Max points
1	Death, Types of Death, and Signs of Death	Report Fishbone	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. Pathology Practical Book, Harsh Mohan 5. BRS 5 edition Philib A. Szanto 6. Rapid Review 5 edition Edward F.Goljan	1	20 points
2	Necrosis: Acute Myocardial Infarction as an Example of Ischemic Necrosis	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto 5. Rapid Review 5 edition Edward F.Goljan	2	20 points
3	Congenital Malformations of the Urinary and Reproductive Systems**	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbin & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto 5. Rapid Review 5 edition Edward F.Goljan	3	20 points
4	DIC Syndrome (Disseminated	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto	4	20 points

	Intravascular Coagulation)**		5. Rapid Review 5 edition Edward F.Goljan		
5	Apoptosis	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto 5. Rapid Review 5 edition Edward F.Goljan	5	20 points
6	Shock: Types of Shock, including Cardiogenic Shock, Traumatic Shock, and Hypovolemic Shock; Pathogenesis and Morphology	Diagram Venna	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto 5. Rapid Review 5 edition Edward F.Goljan	6	20 points
7	Tumors of the Hematopoietic System: Leukemias	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto 5. Rapid Review 5 edition Edward F.Goljan	7	20 points
8	Pathogenetic and Sanogenetic Role of Inflammation	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto 5. Rapid Review 5 edition Edward F.Goljan	8	20 points
9	Comparative Characteristics of Benign and	Diagram Venna	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto	9	20 points

	Malignant Tumors		5. Rapid Review 5 edition Edward F.Goljan		
10	Especially Dangerous Infectious Diseases	Report	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. BRS 5 edition Philib A. Szanto 5. Rapid Review 5 edition Edward F.Goljan	10	20 points
11	Autoimmune Diseases	Report Fishbone	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. Pathology Practical Book, Harsh Mohan 5. BRS 5 edition Philib A. Szanto 6. Rapid Review 5 edition Edward F.Goljan	11	20 points
12	Wound Healing by Primary and Secondary Intention	Report	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. Pathology Practical Book, Harsh Mohan 5. Rapid Review 5 edition Edward F.Goljan	12	20 points
13	Fatty Dystrophies: Hepatosis (Fatty Liver Disease)	Report	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. Pathology Practical Book, Harsh Mohan 5. BRS 5 edition Philib A. Szanto 6. Rapid Review 5 edition Edward F.Goljan	13	20 points
14		Report	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease	14	20 points

	Glycogenoses		4. Pathology Practical Book, Harsh Mohan 5. Rapid Review 5 edition Edward F.Goljan		
15	Atherosclerosis	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. Pathology Practical Book, Harsh Mohan 5. BRS 5 edition Philib A. Szanto 6. Rapid Review 5 edition Edward F.Goljan	15	20 points
16	Pulmonary Edema	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. Pathology Practical Book, Harsh Mohan 5. Rapid Review 5 edition Edward F.Goljan	16	20 points
17	Specific Granulomatous Inflammation: Tuberculosis	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. Pathology Practical Book, Harsh Mohan 5. Rapid Review 5 edition Edward F.Goljan	17	20 points
18	Genetic and Congenital Pathologies	ppt	1. Kumar, Cotran, Robbins. General pathology 2. Robbins Basic pathology. 3. Robbins & Cotran Pathologic Basis of Disease 4. Pathology Practical Book, Harsh Mohan 5. BRS 5 edition Philib A. Szanto 6. Rapid Review 5 edition Edward F.Goljan	18	20 points

Methodological recommendations for preparing independent work

In studying the discipline "Pathological physiology" the following types of independent work of students are used:

- study of theoretical material from lecture notes and recommended textbooks, educational literature, reference sources;
- independent study of some theoretical issues not covered in lectures, with writing abstracts and preparing presentations;

Students are invited to read and meaningfully analyze monographs and scientific articles on biochemistry. The results of working with texts are discussed in practical classes.

To develop independent work skills, students complete assignments, independently turning to educational, reference and scientific-methodological literature. Testing the completion of assignments is carried out both in practical classes with the help of students' oral presentations and their collective discussion, and with the help of written independent work.

An abstract is a brief written summary of the content of a scientific work on a given topic. This is an independent research work where the student reveals the essence of the problem under study with elements of analysis on the topic of the essay.

Presents various 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 of a problem-thematic nature.

Requirements for writing an abstract:

The volume of the abstract can range from 9-10 printed or handwritten pages.

Main sections: table of contents (outline), introduction, main content, conclusion, bibliography.

The text of the abstract must contain the following sections:

- title page indicating: name of the university, department, topic of the abstract, full name of the author and full name of the teacher
- introduction, relevance of the topic.
- main section.
- conclusion (analysis of the results of the literature search); conclusions.
- the list of literary sources must have at least 10 bibliographic titles, including network resources.

The text part of the abstract is drawn up on a sheet of paper in the following format: indentation at the top – 2 cm; left indent – 3 cm; indentation on the right – 1.5 cm; bottom indent – 2.5 cm; text font: Times New Roman, font height – 14, space – 1.5; page numbering is at the bottom of the sheet. There is no number on the first page.

The abstract must be completed competently in compliance with the culture of presentation. There must be references to the literature used, including periodical literature for the last 5 years.

Abstract evaluation criteria:

- relevance of the research topic;
- correspondence of the content to the topic;
- depth of material elaboration;
- correctness and completeness of development of the questions posed;
- the significance of the findings for further practical activities;
- correctness and completeness of the use of literature;
- compliance of the abstract design with the standard;
- quality of communication and answers to questions when defending an abstract.

A report is a type of brief but informative message about the essence of the issue under consideration, various opinions about the subject being studied. In some cases, it is allowed to present the author's own point of view within the framework of thematic issues.

Requirements for the report:

The volume of the abstract should not exceed five printed pages.

A quality report has four main structural elements:

- Introduction;
- Introduction (at this stage the speaker must interest the audience, formulate the relevance and novelty of the research, emphasize the importance and purpose of the work performed.)
- The main part (it talks about the research methods used, the work done, and analyzes the results obtained);
- Conclusion (summarizing the results of the work).

The text part of the report is drawn up on a sheet of the following format:

- indentation at the top – 2 cm; left indent – 3 cm; indentation on the right – 1.5 cm; bottom indent – 2.5 cm;
- text font: Times New Roman, font height – 14, space – 1.5;
- page numbering is at the bottom of the sheet. There is no number on the first page.

Criteria for evaluation:

- timeliness of submission;
- compliance with requirements;
- depth of material elaboration;
- relevance of the content to the topic;
- correctness and completeness of use of the source.

Course Policy

- Students are required to attend all classes (if a student misses more than 2 classes without a valid reason, make-up work is required).
- During practical sessions, students must complete all assigned tasks.
- Disrespectful behavior or rudeness may result in the student being removed from the classroom.

Monitoring and evaluation of learning outcomes

Each module is assessed using a 100-point system. The maximum score is 100. A student is allowed to take the final test if he has a total score in the discipline of 60 points or more.

The results of the modules are added up and the average score is displayed.

Scoring Policy	**Modul 1**	**Modul 2**
Classroom work (activity in discussions, during oral questioning, working with a glossary, etc.)	40 points	40 points
Independent work: essay, report	20 points	20 points
Total by module (testing)	40 points	40 points
Total by discipline:	100 points	100 points

Assessment System

The maximum score for each module is 100 points, including:
Independent Student Work (ISW) – 20 points

Current assessment – 40 points

Midterm assessment (module) – 40 points

The results of all modules within the semester are combined and the average score is calculated.

Students must make up missed classes and unsatisfactory grades according to the department's teacher duty schedule.

A module retake is allowed only for a valid reason and must be completed no later than two weeks after the module date.

Admission to Final Assessment

A student is admitted to the final assessment (differentiated pass or exam) if they obtain 60 points or more in the discipline.

Credit System

Under the credit-based education system, a multi-point grading scale using letter grades is applied, allowing instructors to more flexibly evaluate student knowledge.

Score (%)	**Letter**	**GPA**	**Numeric**	**Traditional**
96–100	A+	4.00	5	Excellent
93–95.99	A	3.75		
90–92.99	A-	3.67		
87–89.99	B+	3.33	4	Good
83–86.99	B	3.00		
80–82.99	B-	2.67		
77–79.99	C+	2.33	3	Satisfactory

73–76.99	C	2.00		
70–72.99	C-	1.67		
67–69.99	D+	1.33	2	Satisfactory
63–66.99	D	1.00		
60–62.99	D-	0.67		
0–59.99	F	0.00	1	Fail

The final assessment in the form of a pass is based on attendance, current assessment, and midterm (module) assessment.

Final assessment format: Pass / Examination.

Score and Grade Correspondence Scale				
Maximal points				
	unsatisfactory	satisfactory	good	excellent
20	0-11	12-15	16-17	18-20
40	0-23	24-30	31-35	36-40
60	0-35	36-45	46-53	54-60
100	0-59	60-75	76-89	90-100

I– assigned to a student who has not fulfilled all course requirements for a valid reason. Within the period установленной by the educational institution, the student has the right to complete all course requirements, after which the grade will be changed.

W – assigned to a student who decides to withdraw from a course no later than after the sixth week of the semester. Applies only to elective courses.

AU– assigned to a student who has attended at least 80% (eighty percent) of classes in an additional course as an auditor (without receiving a grade).

GPA for each discipline is calculated automatically in the AVN information system.

Based on academic performance results, the Grade Point Average (GPA) is calculated, with a maximum value of 4.0. The student's GPA is determined at the end of each semester and cumulatively upon completion of the entire course of study.

Evaluation criteria:

Criteria for assessing the practical lesson:

- an **"excellent"** grade is given to a student if he has knowledge of the discipline

in the full scope of the program and comprehends the discipline sufficiently deeply; independently, in a logical sequence and exhaustively answers all questions, emphasizing the most essential, is able to analyze, compare, classify, generalize, concretize and systematize the studied material, highlight the main thing in it;

- - a **"good"** rating: the student has knowledge of the discipline almost in full of the program (there are knowledge gaps only in some sections); independently and partly with leading questions, gives complete answers to the ticket questions; does not always highlight the most significant, but at the same time does not make serious mistakes in the answers;
- - **a "satisfactory"** grade is given in cases where the student has the basic knowledge of the discipline; shows difficulty in answering independently, uses imprecise formulations; in the process of answering, errors are made regarding the substance of the questions;

- an **"unsatisfactory"** grade is given in cases where the student has not mastered the required minimum knowledge of the subject and is unable to answer the questions on the ticket even with additional leading questions from the teacher.

Criteria for assessing the performance of laboratory work

- **A grade of "5"** is given if the student completes the work in full in compliance with the required sequence of experiments and measurements; independently and rationally installs the necessary equipment; conducts all experiments under conditions and modes that ensure correct results and conclusions are obtained; complies with the requirements of labor safety rules; correctly and accurately completes all entries, tables, graphs, and calculations in the report.
- **A "4"** rating is given if the requirements for a "5" rating are met, but two or three shortcomings were made, no more than one minor error and one shortcoming.
- **A rating of "3"** is given if the work is not completed in full, but the volume of the completed part is such that it allows you to obtain correct results and conclusions: if errors were made during the experiment and measurements**.**
- **A rating of "2"** is given if the work is not completed completely and the volume of the completed part of the work does not allow one to draw correct conclusions: if experiments, measurements, calculations, observations were carried out incorrectly**.**

Evaluation criteria for the report and presentation

№	**Criteria**	**Assessment**	Number of points
1	**Structure**	- the number of slides corresponds to the content and duration of the speech (for a 7-minute speech it is recommended to use no more than 10 slides)	till 2 points

		- presence of a title slide and a conclusion slide	
2	**Visibility**	- Good quality illustrations, clear images, text is easy to read - means of visualization of information are used (tables, diagrams, graphs, etc.	till 4 points
3	**Design and customization**	- the design of the slides corresponds to the theme, does not interfere with the perception of the content, the same design template is used for all presentation slides.	till 2 points
4	**Content**	- the presentation reflects the main stages of the research (problem, goal, hypothesis, progress, conclusions, resources. - contains complete, understandable information on the topic of work - spelling and punctuation literacy	till 6 points
5	**Performance requirement**	- the speaker is fluent in the content, presents the material clearly and competently - the speaker answers questions and comments from the audience freely and correctly - the speaker strictly fits within the framework of the regulations	till 6 points
	Maximum score		**20 points**

Evaluation criteria for notes:

- **the "excellent"** rating is given to the student if the completeness of the use of educational material, the logic of presentation (the presence of schemes, the number of semantic connections between concepts), clarity (the presence of drawings, symbols, etc.; accuracy of execution, readability of the summary, literacy (terminological and spelling);

- **the "good**" rating is given to the student if the use of educational material is not complete, it is not sufficiently logical to present (the presence of schemes, the number of semantic connections between concepts), clarity (the presence of drawings, symbols, etc.; accuracy of execution, readability of the summary, literacy (terminological and spelling), lack of related sentences;

-the "satisfactory" rating is given to the student if the use of educational material is not complete, it is not sufficiently logical to present (the presence of schemes, the number of semantic connections between concepts), clarity (the presence of drawings, symbols, etc.; accuracy of execution, readability of the summary, literacy (terminological and spelling), lack of independence during compilation can be traced;

- **the "unsatisfactory"** rating is given to the student if the use of educational material is not complete, there are no schemes, the number of semantic connections between concepts, there is no clarity (presence of drawings, symbols, etc.; accuracy of execution,

readability of the summary, terminology and spelling errors, lack of independence in drafting were made.

Evaluation criteria for Crossword:

the score **"excellent"** is given to the student if the crossword fits successfully into any figure or image, all the words of the crossword correspond to the topic, the questions are clearly formulated, there are no spelling, grammatical and speech errors;

the grade **"good"** is given to the student if the crossword fits enough into any figure or image, all the words of the crossword correspond to the topic, the questions are clearly formulated, spelling, grammatical and speech errors are present;

- the **"satisfactory"** rating is given to the student if the crossword does not fit into any figure or image, not all words of the crossword correspond to the topic, the questions are not formulated clearly enough, spelling, grammatical and speech errors are present;

- **the "unsatisfactory"** rating is given to the student if the crossword puzzle is not executed or does not fit into any figure or image, most of the words of the crossword puzzle do not correspond to the topic, the questions are not clearly formulated, spelling, grammatical and speech errors are present.

Evaluation criteria for exam:

- the **"excellent"** rating is given to the student, with the number of correct answers from 90 and above;

- the **"good"** rating is given to the student, with the number of correct answers from 76 to 89;

- the **"satisfactory"** rating is given to the student, with the number of correct answers from 60 to 75;

- the **"unsatisfactory**" rating is given to the student if he gave up to 59 correct answers inclusive.

Academic discipline policy:

- compulsory attendance at classes;
- active participation of the student in practical classes;
- preliminary preparation and completion of homework;
- high-quality and timely completion of tasks under CDS;
- participation in all types of control (current, milestone, final);

- one lateness to classes and/or leaving before their end for any reason is considered as one missed lesson that cannot be restored;
- unacceptable: the use of cell phones during classes, deception and plagiarism, late submission of assignments, failure to comply with chain of command and rules of conduct.

Help: For advice on completing independent work (SIW/SIWT), their delivery and defense, as well as for additional information on the material covered and all other questions that arise regarding the course being taught, please contact the teacher, Tuesday, Wednesday . at Moskovskaya 172, office №415

References:

Requirement Sources

- Robbins Basic Pathology (Robbins Pathology) 10th edition
- Robbins. General pathology 10th edition
- Kumar Cotran Robbins. General pathology 5th edition

Additional Sources

- BRS 5 edition Philib A. Szanto
- Rapid Review 5 edition Edward F.Goljan
- **nature.com - Pathology**
- https://morfopatologie.usmf.md/sites/default/files/inline-files/Robbins%20Basic%20Pathology%2010th%20edition.pdf
- https://www.unilus.ac.zm/lms/e-books/books/Basic_Sciences/Pathology/Robbins%20&%20Cotran's%20Review%20of%20Pathology,%203rd%20Edition.pdf
- https://scispace.com/pdf/robbins-and-cotran-pathologic-basis-of-disease-6ztan2ja5x.pdf
- feedspot.com
- webpath.med.utah.edu
- www.amboss.com/int
- www.osmosis.org/