INTERNATIONAL HIGHER SCHOOL OF MEDICINE

Department of Pathology

SYLLABUS

Systemic pathological anatomy
2026-2027 academic year
for students of medical faculty
3 course 6 semester, groups 1-10
2 credits (60 h, including auditorial 36 h, independent work 24 h)

Lecturer: **Turdakunova R.M. (1-10 gr)**
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Practical classes:

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Venue: Vedanta Pathology Dagestanskaya street 6

The Syllabus is considered
at the meeting of the department of Pathology
Protocol №____ dated ____ 2026
Head of the department

Course objective: The purpose of mastering the academic discipline systemic pathological anatomy is to study the structural basis of various human diseases, their etiology, pathogenesis, morphogenesis, complications and outcomes in order to use this knowledge in the study of clinical disciplines for the training of generalists.

After study of the discipline the student must:

Knowledge:

- Rules for preparing and delivering public speeches and for structuring academic texts.
- Methods for solving professional tasks using high-quality informational, bibliographic resources, and information and communication technologies.
- Pathophysiological mechanisms of symptom and syndrome development in the most common diseases, and the ability to justify pathogenetically appropriate diagnostic methods for patients of various age groups.

Skills:

- Construct logically sound and well-argued academic and publicistic texts and present them in educational settings.
- Solve professional tasks using high-quality informational, bibliographic resources, and information and communication technologies.
- Provide practical recommendations for prescribing pathogenetically justified diagnostic procedures to ensure accurate diagnosis of the most common diseases across various age groups.

Attitude:

- Techniques of conducting discussions on professional and scientific topics, as well as for educational and developmental purposes.
- Skills in using high-quality informational, bibliographic resources, and information and communication technologies in solving professional tasks.
- Skills in analyzing and synthesizing information obtained from pathogenetically justified diagnostic procedures to ensure accurate diagnosis of the most common diseases across various age groups.

Pre-requisites:

- Macro- and microanatomy
- Normal physiology
- Microbiology, virology and immunology
- Medical biology
- Systemic pathological physiology
- Biochemistry
- General pathology

Post-requisites: All clinical disciplines

THEMATIC PLAN THEMATIC PLAN OF LECTURES

№	Unit	Theme of lecture	Hours	Date
1	Pathanatomy of diseases of the cardiovascular and respiratory system.	L 1: Pathomorphological characteristics of atherosclerosis and hypertension Pathomorphology of ischemic heart disease.	2	08.09.2025
		L 2: Morphological features of rheumatic diseases. Rheumatism. Acquired heart defects.	2	09.09.2025
		L 3: Morphological features of acute inflammatory lung diseases	2	10.09.2025
		L 4: Morphological features of chronic nonspecific lung diseases. Pulmonary tuberculosis.	2	11.09.2025
2	Pathological anatomy of diseases of the gastrointestinal tract, hepato-biliary and endocrine systems.	L 5: Morphological features of gastritis. Peptic ulcer. Intestinal infections (typhoid fever, salmonellosis, dysentery).	2	12.09.2025
		L 6: Morphological features of hepatoses. Hepatitis. Cirrhosis. Morphological features of diseases of the thyroid gland (thyroiditis, goiter). Diabetes mellitus.	2	13.09.2025
	Total		**12**	

THEMATIC PLAN OF PRACTICAL CLASSES

№	Unit	Theme of practical class	Hours	Date
1	Pathanatomy of diseases of the cardiovascular and respiratory system.	PC 1: Macro- and microscopic changes in organs and tissues in atherosclerosis, arterial hypertension, and ischemic heart disease.	2	According to timetable
		PC 2: Macro- and microscopic changes in organs and tissues in rheumatic disease. Rheumatic fever. Morphological features of acquired heart defects.	2	According to timetable
		PC 3: Macro- and microscopic changes in organs and tissues in cardiomyopathy, myocarditis, infective endocarditis, pericarditis	2	According to timetable
		PC 4: Macro- and microscopic changes in organs and tissues in acute inflammatory lung diseases.	2	According to timetable
		PC 5: Macro- and microscopic changes in organs and tissues in chronic non-specific lung diseases. Morphological features of pulmonary tuberculosis	2	According to timetable
		PC 6: **Unit control-1**	2	According to timetable
2	Pathological anatomy of diseases of the gastrointestinal tract, hepato-biliary and endocrine systems.	PC 7: Macro- and microscopic changes in organs and tissues of the gastrointestinal tract in gastritis, peptic ulcer, appendicitis.	2	According to timetable
		PC 8: Macro- and microscopic changes in the intestinal sections during intestinal infections.	2	According to timetable
		PC 9: Macro- and microscopic changes in the liver in hepatosis and hepatitis.	2	According to timetable
		PC 10: Macro- and microscopic changes in the liver in cirrhosis. Morphological features of cholecystitis: acute, chronic. Cholelithiasis.	2	According to timetable
		PC 11: Macro- and microscopic changes in thyroid tissues in its pathology. Macro- and microscopic changes in organs and tissues in diabetes mellitus.	2	According to timetable
		PC 12: **Unit control-2**	2	According to timetable
	Total		**24**	

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

№	Unit	Theme of independent work	Hours	Date
1	Pathanatomy of diseases of the cardiovascular and respiratory system.	Albums with micro-macro preparations. Working with literature	12	According to timetable
2	Pathological anatomy of diseases of the gastrointestinal tract, hepato-biliary and endocrine systems.	Albums with micro-macro preparations. Working with literature	12	According to timetable
	TOTAL		**24**	

Recommended reading for students:

Basic literature

№	Authors	Title	The year of publishing
1	Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran.	Pathologic Basis of Disease.	2021.
2	Mohan H.	Textbook of Pathology.	2019
3	Kumar V., Abbas A.K., Aster J.A., Deyrup A.T.	Robbins Essential Pathology.	2021

4	Klatt E.C. Robbins and Cotran	Atlas of Pathology	2015

Additional literature

№	Authors	Title	The year of publishing
1	Geraldine O'Dowd, Sarah Bell, Sylvia Wright	Wheater's Pathology. A text, atlas and review of histopathology.	2020
2.	Kumar V., Abbas A.K., Aster J.A.	Robbins Basic Pathology	2018.
3.	Buja L.M., Krueger G.R.F.	Netter's Illustrated Human Pathology.	2014
4.	Mohan H.	Pathology. Practical Book.	2013

Grading policy and procedures for all types of work

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):
current score - 40 points
independent work - 20 points
control score (final assessment of knowledge per unit) - 40 points
Maximum score - 100 (40+20+40)

Grading system for student's achievements

Grading criteria per discipline				
Maximum score	Intervals			
	«unsatisfactory»	«satisfactory»	«good»	«excellent»
Current control – 40	0-23	24-30	31-35	36-40
Interval description	Does not know most of the relevant section of the material being studied, presents the material erratically and uncertainly	Presents the material incompletely and allows for inaccuracies in defining concepts	Gives an answer that meets the same requirements as for an "excellent" rating, but makes 2-3 errors	Completely presents the studied material, gives correct definitions of concepts;
Independent work – 20	0-11	12-15	16-17	18-20
Interval description	The topic is not covered, does not correspond to the plan, indicates superficial knowledge	The material is presented quite logically, but there are some irregularities in the sequence of expression of thoughts;	2-3 inaccuracies in the content, minor deviations from the topic are allowed	Excellent knowledge of the topic, targeted analysis of the material, correct conclusions and generalizations;
Control work (module) – 40	0-23	24-30	31-35	36-40
Interval description	Number of correct answers < 60%	Number of correct answers 60-75%	Number of correct answers 76-89%	Number of correct answers 90-100%
TOTAL – 100	0-59	60-75	76-89	90-100

Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).

- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.

- Doing homework on time.
- Academic detention at the time specified by the teacher.
For violations of the Conduct Policy, the total points for discipline might be reduced to 1-10 points.

Academic Ethics Policy.
- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.
For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-10 points.

Guidelines for the practical classes of the discipline

PROGRAM CONTENT OF UNIT № 1

Topic 1. Key questions covered in Lecture №1 "Pathomorphological characteristics of atherosclerosis and hypertension. Pathomorphology of ischemic heart disease."

1. Definition of atherosclerosis. Causes. Pathogenesis. Morphology. Complications
2. Definition of arterial hypertension. Causes. Pathogenesis. Morphology. Complications
3. Definition of myocardial infarction.
4.Causes. Pathogenesis.
5.Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic 2. Key questions covered in Lecture №2 "Morphological features of rheumatic diseases. Rheumatism. Acquired heart defects."

1. Definition of rheumatic fever. Causes. Pathogenesis. Morphology. Complications
2. Definition of endocarditis. Causes. Morphology. Complications
3. Definition of myocarditis. Causes. Morphology. Complications
4. Definition of pericarditis. Causes. Morphology. Complications
5. Definition of Chronic valvular disease. Causes. Morphogenesis. Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №3. Key questions covered in Lecture №3 "Morphological features of acute inflammatory lung diseases. »

1. Definition of pneumonia. Causes. Pathogenesis. Morphology. Complications
2. Definition of lung abscess. Causes. Pathogenesis. Morphology. Complications
3. Definition of pneumoconiosis. Causes. Pathogenesis. Morphology. Complications
4. Definition of atelectasis. Causes. Pathogenesis. Morphology. Complications
5. Definition of pulmonary infarction. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №4. Key questions covered in Lecture №4 « Morphological features of chronic nonspecific lung diseases. Pulmonary tuberculosis. »

1. Definition of tuberculosis. Causes. Pathogenesis. Morphology. Complications
2.Pulmonary form of tuberculosis. Pathogenesis. Morphology. Complications
3. Types of pneumosclerosis. Causes. Pathogenesis. Morphology. Complications
4. Definition of chronic bronchitis. Causes. Pathogenesis. Morphology. Complications
5. Definition of bronchial asthma. Causes. Pathogenesis. Morphology. Complications

6. Definition of bronchiectasis. Causes. Pathogenesis. Morphology. Complications
7. Definition of emphysema. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №5. Key questions covered in Practical class №1 « Macro- and microscopic changes in organs and tissues in atherosclerosis, arterial hypertension, and ischemic heart disease. »

1. Definition of atherosclerosis. Causes. Pathogenesis. Morphology. Complications
2. Definition of vasculitis. Causes. Pathogenesis. Morphology. Complications
3.. Etiopathogenesis of arteritis. Morphology. Complications
4. Definition of arterial hypertension. Causes. Pathogenesis. Morphology. Complications
5. Definition of myocardial infarction. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №6. Key questions covered in Practical class №2 « Macro- and microscopic changes in organs and tissues in rheumatic disease. Rheumatic fever. Morphological features of acquired heart defects. »

1. Definition of rheumatic fever. Causes. Pathogenesis. Morphology. Complications
2. Definition of rheumatic heart disease. Causes. Pathogenesis. Morphology. Complications
3. Definition of acquired heart defects. Causes. Pathogenesis. Morphology. Complications
4. Definition of pericarditis. Causes. Pathogenesis. Morphology. Complications
5. Definition of heart failure. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015

Topic №7. Key questions covered in Practical class №3 « Macro- and microscopic changes in organs and tissues in cardiomyopathy, myocarditis, infective endocarditis, pericarditis»

1. Definition of cardiomyopathies. Causes. Pathogenesis. Morphology. Complications
2. Definition of infective endocarditis. Causes. Pathogenesis. Morphology. Complications
3. Definition of pericarditis. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №8. Key questions covered in Practical class №4 « Macro- and microscopic changes in organs and tissues in acute inflammatory lung diseases. »

1. Definition of pneumonia. Causes. Pathogenesis. Morphology. Complications
2.Lobar pneumonia. Causes. Pathogenesis. Morphology. Complications
3. Bronchopneumonia. Causes. Pathogenesis. Morphology. Complications
4. Interstitial pneumonia. Causes. Pathogenesis. Morphology. Complications
5. Lung abscess. Definition. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №9. Key questions covered in Practical class №5 « Macro- and microscopic changes in organs and tissues in chronic non-specific lung diseases. Morphological features of pulmonary tuberculosis »

1. Definition of tuberculosis. Causes. Pathogenesis. Morphology. Complications

2.Pulmonary form of tuberculosis. Pathogenesis. Morphology. Complications
3. Types of pneumosclerosis. Causes. Pathogenesis. Morphology. Complications
4. Definition of chronic bronchitis. Causes. Pathogenesis. Morphology. Complications
5. Definition of bronchial asthma. Causes. Pathogenesis. Morphology. Complications
6. Definition of bronchiectasis. Causes. Pathogenesis. Morphology. Complications
7. Definition of emphysema. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №10. Practical class №6. Unit control-1. »

Recommended reading for this class:

1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

List of questions for MCQ part of the final unit examination:

1. Which of the following arterial layers is affected by atherosclerosis?
A. Tunica adventitia B. Tunica media C. External elastic lamina D. Tunica intima E. Internal elastic lamina
2. Which of the following types of uncomplicated macroscopic changes in the intima of arteries is observed in atherosclerosis?
A. Mural thrombosis B. Ulceration C. Fibrous plaques D. Intramural hematoma E. Atherocalcinosis
3. Describe the macroscopic characteristics of fatty streaks and dots in atherosclerosis:
A. Elevated above the intima B. Not elevated above the intima C. Localized in the media of the artery D. Localized in the adventitia E. Ulcerated
4. Which of the following pathogenetic mechanisms of calcification is present in atherosclerotic plaques?
A. Metabolic B. Dystrophic C. Metastatic D. Secondary E. Primary
5. Which of the following stages of atherosclerosis morphogenesis can be diagnosed only by electron microscopic or histochemical studies?
A. Prelipid B. Ulceration and atherocalcinosis C. Lipoidosis D. Liposclerosis E. Atheromatosis
6. Which of the following cells are the origin of foam cells in atherosclerotic plaques?
A. Granulocytes B. Macrophages C. Lymphocytes D. Plasma cells E. Histiocytes
7. Describe the morphogenesis of intramural hematomas in the thickness of an atherosclerotic plaque:
A. Rupture of the plaque cap B. By thickening of the vessel wall in the plaque C. By diapedesis from the lumen of the vessel D. By diapedesis from newly formed vessels in the plaque E. By rupture of the arterial wall
8. Which of the following changes in internal organs occur as a result of chronic ischemia in atherosclerosis?
A. Infarction B. Gangrene C. Hemorrhage D. Dystrophy and atrophy E. Necrosis
9. Which of the following myocardial changes can be attributed to acute ischemic heart disease?
A. Metabolic myocardial damage B. Fatty myocardial degeneration C. Myocardial infarction D. Granulomatous myocarditis E. Cardiomyopathy
10. Which of the following macroscopic changes in the heart are characteristic of acute myocardial infarction?
A. Irregularly shaped necrotic focus in the myocardium B. Triangularly shaped necrotic focus in the myocardium C. Irregularly shaped sclerotic focus in the myocardium D. The heart has a tiger-like appearance E. There are many small sclerotic foci in the myocardium
11. Which type of emphysema characterize by large subpleural blebs?
A. Compensatory B. Senile C. Obstructive D. Interstitial E. Bullous
12. Which type of emphysema it is a result from age-related alterations?
A. Compensatory B. Senile C. Obstructive D. Interstitial E. Bullous
13. Which stage of lobar pneumonia characterize by hardness, airless and liver like consistency of lobe of lung?
A. Resolution B. Congestion C. Red hepatization D. Grey hepatization E. Organization
14. Which pathological process is an extrapulmonary complication in lobar pneumonia?
A. Lung abscess B. Carnification of the lung C. Purulent arthritis D. Gangrene of the lung E. Pleural empyema
15. Which pathological process is an extrapulmonary complication in lobar pneumonia?
A. Lung abscess B. Carnification of the lung C. Peritonitis D. Gangrene of the lung E. Pleural empyema
16. What term is used to refer to lobar pneumonia?
A. Bronchopneumonia B. Intermediate pneumonia C. Crupous pneumonia D. Focal pneumonia E. Lobular pneumonia
17. The presence of which cells in the alveoli is morphological sign of the resolution stage in lobar pneumonia?

A. Neutrophilov B. Erythrocytes C. Alveolocytes D. Plasmocytes E. Macrophagov
18. Which pathological process is a pulmonary complication in lobar pneumonia?
A. Purulent mediastinitis B. Purulent pericarditis C. Purulent meningitis D. Pleural empyema E. Septic endocarditis
19. Which pathological process is an extrapulmonary complication in lobar pneumonia?
A. Lung abscess B. Carnification of the lung C. Purulent mediastinitis D. Gangrene of the lung E. Pleural empyema
20. What is the typical localization of the inflammatory process in interstitial pneumonia?
A. Alveoli B. Lung stroma C. Bronchi D. Bronchioles E. Pleura

PROGRAM CONTENT OF UNIT № 2

Topic №11. Key questions covered in in Lecture №5 « Morphological features of gastritis. Peptic ulcer. Intestinal infections (typhoid fever, salmonellosis, dysentery). »
1. Definition of gastritis. Causes. Pathogenesis. Morphology. Complications
2. Definition of peptic ulcer. Causes. Pathogenesis. Morphology. Complications
3. Definition of typhoid fever. Causes. Pathogenesis. Morphology. Complications
4. Definition of salmonellosis. Causes. Pathogenesis. Morphology. Complications
5. Definition of dysentery. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:
1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №12. Key questions covered in Lecture №6« Morphological features of hepatoses. Hepatitis. Cirrhosis. Morphological features of diseases of the thyroid gland (thyroiditis, goiter). Diabetes mellitus. »
1. Definition of hepatitis. Causes. Pathogenesis. Morphology. Complications
2. Definition of hepatosis. Causes. Pathogenesis. Morphology. Complications
3. Definition of cirrhosis. Causes. Pathogenesis. Morphology. Complications
4. Thyroid gland diseases. Causes. Pathogenesis. Morphology. Complications
5. Thyroiditis. Causes. Pathogenesis. Morphology. Complications
6. Goiter. Causes. Pathogenesis. Morphology. Complications
7. Diabetes mellitus. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:
1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №13. Key questions covered in Practical class №7 « Macro- and microscopic changes in organs and tissues of the gastrointestinal tract in gastritis, peptic ulcer, appendicitis. »
1. Definition of gastritis. Causes. Pathogenesis. Morphology. Complications
2. Definition of peptic ulcer. Causes. Pathogenesis. Morphology. Complications
3. Definition of appendicitis. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:
1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №14. Key questions covered in Practical class №8 «Macro- and microscopic changes in the intestinal sections during intestinal infections».
1. Definition of typhoid fever. Causes. Pathogenesis. Morphology. Complications
2. Definition of salmonellosis. Causes. Pathogenesis. Morphology. Complications
3. Definition of dysentery. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:
1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.

2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №15. Key questions covered in Practical class №9 « Macro- and microscopic changes in the liver in hepatitis and hepatosis»
1. Definition of hepatitis. Causes. Pathogenesis. Morphology. Complications
2. Differential diagnosis between hepatitis
3. Definition of hepatosis. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:
1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №15. Key questions covered in Practical class №10 « Macro- and microscopic changes in the liver in cirrhosis. Morphological features of cholecystitis: acute, chronic. Cholelithiasis»
1. Definition of cirrhosis. Causes. Pathogenesis. Morphology. Complications
2. Differential diagnosis between cirrhosis
3. Definition of cholecystitis. Causes. Pathogenesis. Morphology. Complications
4. Cholelithiasis. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:
1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №17. Key questions covered in Practical class №11 « Macro- and microscopic changes in thyroid tissues in its pathology. Macro- and microscopic changes in organs and tissues in diabetes mellitus. »
1. Thyroid gland diseases. Causes. Pathogenesis. Morphology. Complications
2. Thyroiditis. Causes. Pathogenesis. Morphology. Complications
3. Goiter. Causes. Pathogenesis. Morphology. Complications
4. Hypothyroidism. Causes. Pathogenesis. Morphology. Complications
5. Type I diabetes mellitus. Causes. Pathogenesis. Morphology. Complications
6. Type II diabetes mellitus. Causes. Pathogenesis. Morphology. Complications

Recommended reading for this class:
1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

Topic №18. Practical class №12 Unit control-2»

Recommended reading for this class:
1.Kumar V., Abbas A.K., Aster J.A. Robbins and Cotran Pathologic Basis of Disease. 2021.
2.Kumar V., Abbas A.K., Aster J.A., Deyrup A.T. Robbins Essential Pathology. 2021.
3.Mohan H. Textbook of Pathology. 2019.
4.Klatt E.C. Robbins and Cotran Atlas of Pathology. 2015.

List of questions for MCQ part of the final unit examination:

1. Where is the primary reproduction of the virus occurs in case of enteral infection with hepatitis A virus?
A. In the wall of the small intestine B. In the salivary glands C. In tonsils D. In mesenteric lymph nodes E. In the wall of the large intestine
2. Where is the primary reproduction of the virus occurs in case of parenteral hepatitis B virus infection?

A. In the intestinal wall B. Regional lymph nodes C. In blood serum D. At the place of implementation E. In the cytoplasm of hepatocytes
3. Counsilman body or acidophil body are markers of which pathology in liver?
A. Alcoholic hepatitis B. Cirrhosis of the liver C. Viral hepatitis B D. Drug-induced hepatitis E. Tuberculosis hepatitis
4. Mallory bodies are markers of which pathology?
A. Chronic cholestatic hepatitis B. Toxic liver dystrophy C. Alcoholic hepatitis D. Viral hepatitis A E. Portal cirrhosis of the liver
5. Which type of necrosis occurs in around the central vein?
A. Bridging B. Centrilobular C. Focal D. Massive E. Submassive
6.Which of the following defines the term "acute gastritis":
A. dystrophic disease of the gastric mucosa B. inflammatory disease of the gastric mucosa C. dysregenerative disease of the gastric mucosa D. infectious disease with damage to the gastric mucosa E. precancerous disease of the stomach
7. Specify the forms of acute gastritis depending on the localization of the process:
A. superficial, deep B. primary, secondary C. atrophic, hypertrophic D. focal, diffuse E. Type A gastritis, type B gastritis
8. Which of the following are morphological forms of acute gastritis:
A. superficial, diffuse B. fibrinous, purulent C. primary, secondary D. phlegmonous-ulcerative, apostematous E. atrophic, hypertrophic
9. Which of the following are the variants of acute fibrinous gastritis:
A. superficial, deep B. catarrhal, erosive C. croupous, diphtheritic D. primary, secondary E. focal, diffuse
10. Which of the following are the forms of chronic gastritis depending on the mechanism of action of pathogenic factors:
A. superficial, diffuse B. exogenous, endogenous C. primary, secondary D. type A gastritis, type B gastritis E. acute, chronic
11. Which of the following are the morphological form of chronic gastritis:
A. Catarrhal B. Superficial C. Purulent D. Hemorrhagic E. Mucous
12. Which of the following are the form of chronic gastritis in which intestinal metaplasia of the gastric epithelium develops:
A. Catarrhal B. Fibrinous C. Atrophic D. phlegmonous-ulcerative E. superficial
13. Which morphological type of goiter is characterized by proliferation of epithelium of thyroid follicles with the formation of solid structures?
A. Macrofollicular colloidal B. Parenchymal C. Microfollicular colloidal D. Macro-microfollicular colloidal E. Proliferating colloidal
14. Which pathology of the thyroid gland is characterizing by atrophy of parenchyma with an overgrowth of fibrous connective tissue?
A. Thyrotoxic goiter B. De Quervain's thyroiditis C. Subacute lymphocytic thyroiditis D. Hashimoto's thyroiditis
E. Riedel's thyroiditis
15. Which pathological process occurs in liver in diabetes mellitus?
A. Amyloidosis B. Fatty hepatitis C. Hyalinosis D. Calcification E. Necrosis
16. Which complication of diabetes mellitus is associated with the development of macroangiopathy?
A. Myocarditis B. Cardiomyopathy C. Myocardial infarction D. Acute verrucous endocarditis E. Fibrinous pericarditis
17. Which complication of diabetes mellitus is associated with the development of diabetic nephropathy?
A. Myocarditis B. Diffuse glomerulosclerosis C. Retinopathy D. Acute verrucous endocarditis E. Fibrinous pericarditis
18. What pathological process is characterized by derangements of glycogen metabolism?
A. Atherosclerosis B. Diabetes mellitus C. Viral hepatitis D. Arterial hypertension E. Goiter
19. In which organ occurs colloid degeneration?
A. Salivary gland B. Prostate gland C. Thyroid gland D. Pituitary gland E. Parathyroid gland
20. Which of the following characteristics define Ulcerative colitis:
A. Usually involves the entire thickness of the affected segment of bowel wall B. Depth of inflammation - **t**ypically transmural C. Submucosa - widened due to edema and lymphoid aggregates D. Muscularis infiltrated by inflammatory cells E. Usually superficial, confined to mucosal layers

Methodological instructions for the implementation of independent work on the discipline

On A4 list you must fill out a table with the differential diagnosis of various pathological processes
Also on A4 lists you should draw the macroscopic and microscopic morphology of organs and tissues in pathological processes
You can take information and illustrative material from the book "Pathology" by Harsh Mohan (seventh edition 2015)

Unit 1.

Cardiovascular system

1. On A4 lists you should draw the macroscopic and microscopic morphology of organs and tissues in pathological processes (you can take information and illustrative material from the book «Pathology» by Harsh Mohan (seventh edition 2015):
   - Histological appearance of a fully-developed atheroma in the intimal layer (figure 13.8., p-379).
   - Histological changes in myocardial infarction (24 hours, 48-72 hours, end of the first week) (figure 14.18., p-412).
   - An Aschoff body (granulomatous stage) in the myocardium (figure 14.25., p-420).
   - Draw and mark 3 zones in vegetations in infective endocarditis (p-427).
2. Using information about the morphological features of acute and chronic pericarditis, create a crossword puzzle (minimum 10 words) (p-437-439).
3. Describe the following rheumatic diseases (p-62-66, p-765-766, p-383):

Disease	Affected Organs/Tissues	Histological Features	Macroscopic Changes	Pathological Consequences
Systemic Lupus Erythematosus				
Scleroderma				
Dermatomyositis				
Polyarteritis Nodosa				

4. Match diseases and key morphological findings (p-62-66, p-765-766, p-383):

Systemic Lupus Erythematosus		Segmental necrotizing vasculitis
Scleroderma		Wire-loop lesions in glomeruli, fibrinoid necrosis
Dermatomyositis		Excessive collagen deposition in the dermis
Polyarteritis Nodosa		Perifascicular atrophy in muscle fibers

5. Write a short report on the theme «Vasculitis» (1-2 pages of handwritten text), choosing one of the proposed types of vasculitis (p-381-386):
   - Polyarteritis Nodosa
   - Hypersensitivity Vasculitis
   - Wegener's Granulomatosis
   - Temporal (Giant cell) Arteritis
   - Takayasu Arteritis (Pulseless Disease)
   - Kawasaki Disease
   - Buerger's Disease (Thromboangitis Obliterans)

Use the following outline when writing report: Definition, Etiopatogenesis, Age and gender category of the patients, Affected vessels, Target organs, clinical manifestations, Morphological features (gross, histological features).

Respiratory system

1. On A4 lists you should draw the macroscopic and microscopic morphology of organs and tissues in pathological processes (you can take information and illustrative material from the book «Pathology» by Harsh Mohan (seventh edition 2015):
   - The four stages of lobar pneumonia, showing correlation of gross appearance of the lung with microscopic features in each stage (figure 15.6., p-450).
   - Contrasting features of major forms of COPD (table 15.4., p-549)
   - Pathogenesis of three common forms of pneumoconiosis (figure 15.27., p-470).
   - Miliary tuberculosis in lung having minute areas of central caseation necrosis (figure 5.31., p-146)
2. Describe schematically the pathogenesis of Neonatal and adult respiratory distress syndrome (figure 15.3., p-445).
3. Describe the types of bronchogenic carcinoma (p-477-483):

Options	Squamous cell carcinoma	Small cell carcinoma	Adeno-carcinoma	Large cell carcinoma	Adeno-squamous carcinoma

Epidemiology					
Typical localization					
Morphological features and grades of differentiation					
Prognosis					

4. Write a short report on the theme «Pneumoconiosis» (1-2 pages of handwritten text), choosing one of the proposed rare types of Pneumoconiosis:

- Farmer's lungs
- Bagassosis
- Byssinosis
- Bird-breeders' (bird fancier's) lung
- Mushroom-workers' lung
- Malt-workers' lung
- Maple-bark disease
- Silo-fillers' disease

Use the following outline when writing report: Definition, Etiopatogenesis, Age and gender category of the patients, Target organs, Morphological features (gross, histological features), outcomes.

Additional literature for report:

- Murray and Nadel's Textbook of Respiratory Medicine V.C. Broaddus, R.J. Mason, J.F. Ernst, et al. Elsevier, 7th ed., 2021, p.1614–1626, p. 1565–1590.
- Fishman's Pulmonary Diseases and Disorders Michael A. Grippi, et al., McGraw Hill, 5th ed., 2015, p.1224–1239, p.1200–1223.
- Occupational and Environmental Lung Diseases: A Practical Guide Johanna Feary, Paul Cullinan, Springer, 2020, p.96–102, p.78–87.
- Textbook of Pulmonary and Critical Care Medicine S.K. Jindal Jaypee Brothers Medical Publishers, 2nd ed, 2017, p.884–910.

Unit 2.

Gastrointestinal system

1. On A4 lists you should draw the macroscopic and microscopic morphology of organs and tissues in pathological processes (you can take information and illustrative material from the book «Pathology» by Harsh Mohan (seventh edition 2015):

- Chronic atrophic gastritis contrasted with normal pyloric mucosa (figure 18.10., p-532)
- Chronic peptic ulcer. Histologic zones of the ulcer (figure 18.14., p-536)
- Crohn's disease of the ileum (figure 18.26., p-550)
- Ulcerative colitis in active phase (figure 18.28., p-551)
- Distinguishing features of Crohn's disease and ulcerative colitis (table 18.6., p-552)
- Gastric carcinoma, gross appearance of subtypes and their corresponding dominant histological patterns (figure 18.18., p-540-541)

2. Compare the histological differences between types of esophagitis. Prepare a table or a comparative essay that contrasts the morphological findings in: Reflux Esophagitis, Barrett's esophagus, Infectious Esophagitis (e.g., Candida, Herpes simplex) (p-523-524, p-566-574).

3. Write a short report on the theme «Tumors of the intestine» (1-2 pages of handwritten text), choosing one of the proposed types of Tumors of the intestine 559-561:

- Adenocarcinoma
- Mucinous adenocarcinoma
- signet-ring cell carcinoma
- small cell carcinoma
- adenosquamous carcinoma
- undifferentiated carcinoma
- Carcinoid tumor

- Malignant non-epithelial tumors (Leiomyosarcoma, malignant lymphoma, malignant melanoma, angiosarcoma, Kaposi's sarcoma)

Use the following outline when writing report: Definition, Etiopatogenesis, Age and gender category of the patients, Morphological features (gross, histological features), outcomes.

Liver diseases

1. On A4 lists you should draw the macroscopic and microscopic morphology of organs and tissues in pathological processes (you can take information and illustrative material from the book «Pathology» by Harsh Mohan (seventh edition 2015):
   - Acute viral hepatitis (figure 19.12., p-596)
   - Chronic hepatitis (figure 19.13 B., p-597)
   - Alcoholic cirrhosis (figure 19.25, 19.26., p-608)
   - Post-necrotic cirrhosis. (figure 19.27, 19.28., p-610)
   - Primary biliary cirrhosis. (figure 19.29., p-611)

2. Fill the table «**Liver cell necrosis**» (p-583):

Types	Causes	Morphological features
Diffuse (submassive to massive) necrosis		
Zonal necrosis		
1. Centrilobular necrosis		
2. Midzonal necrosis		
3. Periportal (peripheral) necrosis		
Focal necrosis		

3. Describe the types of hepatic and pancreatic tumors (p-617-623):

Options	Hepatocellular carcinoma	Cholangiocarcinoma	Hepatoblastoma (Embrioma)	Carcinoma of pancreas
Epidemiology				
Typical localization				
Morphological features and grades of differentiation				
Prognosis				

4. Describe the types of pancreatitis (p-631-633)

Options	Acute pancreatitis	Chronic pancreatitis
Definition		
Etiology		
Pathogenesis		
Gross features		
Microscopical features		
Complications		

Endocrine system

1. On A4 lists you should draw the macroscopic and microscopic morphology of organs and tissues in pathological processes (you can take information and illustrative material from the book «Pathology» by Harsh Mohan (seventh edition 2015):
   - Hashimoto's thyroiditis (figure 25.7, p-796)
   - Grave's disease (figure 25.8, p-797)
   - Simple goiter (figure 25.11, p-799)
   - Nodular goiter (figure 25.13, p-800)
   - Contrasting features of main histologic types of thyroid carcinoma (Table 25.3, p-802)
   - Morphologic and functional classification of pituitary adenomas (Table 25.1, p-786)
2. Write a short report on the theme «Pathanatomy of endocrine system», choosing one of the proposed diseases (1-2 pages of handwritten text):
   - Hyperpituitarism

- Hypopituitarism
- Hyperparathyroidism
- Hypoparathyroidism
- Cushing´s syndrome (Chronic hypercortisolism)
- Conn´s syndrome (Primary hyperaldosteronism)
- Adrenogenital syndrome (Adrenal Virilism)
- Adrenocortical Insufficiency (Hypoadrenalism)

Use the following outline when writing report: Definition, Etiopatogenesis, Age and gender category of the patients, Morphological features (gross, histological features), outcomes.