INTERNATIONAL HIGHER SCHOOL OF MEDICINE

Internal Medicine Department

SYLLABUS
Discipline: Cardiology

2025-2026 academic year
for students of medical faculty
3 course, 7 semester, 1-9groups
2 credits (60 h, including auditorial 40 h, independent work 20 h)

Lecturer: **Kudaibergenova Nazira**
+996 777357398 (Whatsapp)
Email: nazira_@rambler.ru
Leonteva Natalia
+996 551535251 phone (Whatsapp)
Email: natik-86@list.ru

Venue: Zoom

Practical classes: **Kudaibergenova Nazira**
+996 777357398 (Whatsapp)
Email: nazira_@rambler.ru
Leonteva Natalia
+996 551535251 phone (Whatsapp)
Email: natik-86@list.ru

Venue: Vedanta, hospital No 6, Oncology center

The Syllabus is considered
at the meeting of the department of internal medicine
Protocol № 1 dated 03.09.2025
Head of the department prof. Kudaibergenova N.T.

Course Objective: consists in mastering the knowledge of diseases of internal organs, as well as the principles of diagnosis, skills and abilities for the treatment and prevention of internal diseases.
After study of the discipline the student must:
Knowledge:
- issues of medical ethics and deontology;
- epidemiology, the influence of etiological factors and risk factors on the course and outcome of diseases of internal organs;
- modern theories of the pathogenesis of the main internal diseases in adults;
- modern classification, etiology, pathogenesis, clinical and laboratory investigation of the main diseases of internal organs;
- modern diagnostic methods, standards for the treatment of diseases of internal organs;
- therapeutic nutrition for internal diseases;
- examination of a patient with pathology of internal organs;
- principles of preventive measures - identification of risk factors, primary and secondary prevention of non-communicable diseases;
- rules for issuing certificates and certificates for work of patients with internal diseases.
Skill:
- communicate with patients in compliance with deontological norms and principles;
- get information about the disease, establish possible causes, taking into account the influence of social, hereditary, age and climatic factors on the body;
- assess the severity of the patient's condition and, if necessary, provide emergency care;
- make the right decision on the tactics of patient management;
- conduct functional, laboratory and instrumental studies, evaluate them;
- recognize the features of the clinical course, identify complications and concomitant diseases;
- conduct differential diagnosis, formulate and substantiate a clinical diagnosis;
- choose the tactics of management due to individual and pathogenetic characteristics;
- make a rehabilitation and prevention plan;
- monitor the patient in the intensive care unit;
- write a medical documentation in accordance with the law;
- analyze the scientific literature and prepare an essay on modern problems of diseases of internal organs.
Attitude:
- fundamentals of medical deontology and medical ethics;
- evaluation of the results of laboratory and special research methods (clinical, functional, morphological, biochemical, immunological, serological parameters of blood, urine, sputum, feces, cerebrospinal fluid, coagulogram indicators);
- interpretation of the results of functional examination of the respiratory system, cardiovascular system, gastrointestinal tract, liver, kidneys, central nervous system, blood system etc.;
- the method of management of internal diseases, pathological conditions, in accordance with the standard of medical care for diseases of internal organs;
- registration of medical documentation in the hospital and on an outpatient basis.
Pre-requisites.
Anatomy (macro-microanatomy)
Normal physiology
Pathological anatomy
Pathological physiology
Clinical Pharmacology
Propedtherapy
Post-requisites.
Surgical diseases
Occupational diseases
Oncology
Public health
Dermatovenereology
Outpatient conditions
Medical supervision
Family Medicine
Anesthesiology, Intensive Care, Emergency Conditions

THEMATIC PLAN OF LECTURES

№	Theme of lecture	Hours	Date
1	Atherosclerosis, Dyslipidemia. Coronary Heart Disease. Angina Pectoris. Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Complications, Diagnosis, Treatment, and Prevention.	2	09.2025-05.2026
2	Coronary Heart Disease. Acute Coronary Syndrome with and without ST-Segment Elevation. Unstable Angina. Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Complications, Diagnosis, Treatment, and Prevention.	2	09.2025-05.2026
3	Acute Myocardial Infarction (AMI). Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Complications, Diagnosis, Treatment, and Prevention.	2	09.2025-05.2026
4	Chronic and Acute Heart Failure. Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Diagnosis, Treatment, and Prevention.	2	09.2025-05.2026
5	Valvular Heart Defects. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention.	2	09.2025-05.2026
6	Inflammatory diseases of the endocardium, myocardium, and pericardium. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention.	2	09.2025-05.2026

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours	Date
1	Clinical analysis of patients with atherosclerosis of various locations. Analysis of dyslipidemia and familial forms of hypercholesterolemia.	2	09.2025-05.2026
2	Clinical analysis of patients with angina.	2	09.2025-05.2026
3	Clinical analysis of patients with acute coronary syndrome without ST segment elevation. Unstable angina.	2	09.2025-05.2026
4	Clinical analysis of patients with acute coronary syndrome with ST segment elevation. Acute myocardial infarction.	2	09.2025-05.2026
5	Clinical analysis of situational tasks involving mechanical and hemodynamic complications of acute myocardial infarction.	2	09.2025-05.2026
6	Clinical analysis of situational tasks involving acute heart failure. Pulmonary edema. Cardiogenic shock. Cor pulmonale.	2	09.2025-05.2026
7	Module 1.	2	09.2025-05.2026
8	Differential diagnosis of acquired valvular heart defects with a clinical patient analysis. Mitral valve stenosis and regurgitation.	2	09.2025-05.2026
9	Differential diagnosis of acquired valvular heart defects with a clinical patient analysis. Aortic and tricuspid valve stenosis and regurgitation.	2	09.2025-05.2026
10	Clinical patient analysis with infective endocarditis. Principles of antibacterial therapy, primary and secondary prevention.	2	09.2025-05.2026
11	Clinical case study with various types of cardiomyopathy.	2	09.2025-05.2026
12	Clinical case study with pericarditis. Cardiac tamponade.	2	09.2025-05.2026
13	Clinical patient analysis with chronic heart failure.	2	09.2025-05.2026
14	Module 2.	2	09.2025-05.2026

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

Unit №	Theme of independent work	Hours	Date
1	Pulmonary hypertension.	2	09.2025-05.2026
2	Diabetes mellitus – risk factor of hypertension. Endotelial dysfunction	2	09.2025-05.2026
3	Cardio-renal syndrome	2	09.2025-05.2026
4	Clinical anatomy and physiology of coronary circulation	2	09.2025-05.2026
5	Sleeping myocardial syndrome	2	09.2025-05.2026
6	Stress-test for diagnostic of IHD (veloergometry, tredmil-test etc.)	2	09.2025-05.2026
7	Cardiac rehabilitation after acute myocardial infarction	2	09.2025-05.2026

8	Surgical methods of treatment of coronary heart disease (Coronarangyography)	2	09.2025-05.2026
9	Cardio-vascular diseases at patient with COVID-19	2	09.2025-05.2026
10	The implantation of an artificial pacemaker	2	09.2025-05.2026

Recommended reading for the discipline:

Basic:

№	Authors	Title	The year of publishing
1.	Harrison. Braunwald E.	Internal Medicine	2001
2.	Harrison. Braunwald E.	Principles of Internal Medicine	2001
3.	Harrison. Braunwald E.	Principles of Internal Medicine	2001
4.	Harrison. Braunwald E.	Principles of Internal Medicine	2005
5.	Harrison.Wiener Ch.M.	Principles of Internal Medicine. Self-Assessment and Board Review	2005
6.	Harrison. Fauci A.S.	Principles of Internal Medicine	2008
7.	Harrison's Kasper D.L.	Principal of Internal Medicine.	2015
8.	S Melmed, R Koenig, C Rosen., et al.	Textbook of Endocrinology	2017
9.	Harrison Liu KD, Chertow GM.	Principles of Internal Medicine	2022

Additional:

№	Authors	Title	The year of publishing
1.	Davidson. Haslett C.	Priciples and Practice of Medicine	2002
2.	Davidson. Boon N.	Priciples and Practice of Medicine	2006
3.	Davidson. Ralston S.	Priciples and Practice of Medicine	2018

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

Criteria for assigning grades for the course				
Maximum score	Intervals			
	« unsatisfactory»	« satisfactory»	«good »	«excellent»
40	0-23	24-30	31-35	36-40
Interval criteria	Does not complete homework or prepare for class, and is inactive in class. Unable to apply acquired knowledge to solving clinical problems.	Completes assignments, but with serious errors, is active in class, but does not differentiate the diagnosis of various diseases.	Completes homework, and is almost always prepared for class. Able to solve clinical problems, but with minor errors.	Completes homework, and correctly analyzes clinical problems involving various diseases
IWS-20	0-11	12-14	15-17	18-20
Interval criteria	assignments for independent work are not completed, or they contain numerous errors; the student has not met the requirements for composing the work	The tasks for independent work are completed, but with errors; 2 points are missing from the program.	assignments for independent work are completed, mostly without errors or with minor errors, one point is missing from the program	assignments for independent work are completed without errors, the material is fully prepared according to the sample
40	0-23	24-30	31-35	36-40
Interval criteria	The answer represents disjointed knowledge	The answer is incomplete, contains errors in detail, the	A complete, detailed answer to the question was given,	A complete, detailed answer to

	with significant errors regarding the question; - fragmentary and illogical presentation; the student does not understand the connection between the question being discussed and other subjects of the course; speech is illiterate; - significant errors in demonstrating exercises; incorrect choice of tactics for the given disease; - incorrect answers to additional questions.	ability to convey the meaning of generalized knowledge is not demonstrated, and the student's speech requires correction and adjustments; - the logic and consistency of presentation are impaired; the student is unable to independently identify essential and non-essential features and cause-and-effect relationships; - errors in the prescription and correct choice of treatment method; - numerous errors in patient management tactics; - the student is unable to answer most of the additional questions.	demonstrating the ability to distinguish essential and non-essential features and cause-and-effect relationships; - the narrative is not logical enough, with isolated errors in details, which the student corrected with the teacher's assistance; - insufficient confidence and speed in demonstrating the exercises; - isolated errors in technique; - answers to additional questions are correct, but not sufficiently complete and clear.	the question posed is provided; - the answer has a clear structure and logical sequence, reflecting the essence of the concepts, theories, and phenomena being explored; - the exercises are selected and performed correctly; - answers to additional questions are clear and concise;

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 lessons of the discipline

Key questions covered in lesson 1. Clinical analysis of patients with atherosclerosis of various locations. Analysis of dyslipidemia and familial forms of hypercholesterolemia.

Atherosclerosis. Definition. Risk factor. Corrected and non-corrected risk factors for atherosclerosis Clinical manifestations of atherosclerosis. Pathomorphology and pathophysiology. Clinical implications. Additional research methods. Treatments. Prevention**.**

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Libby P. The pathogenesis, prevention, and treatment of atherosclerosis. In:Braunwald E, Fauci AS, Kasper KL, et al., Eds. Harrison's Principles of InternalMedicine. 17th ed. New York, NY: McGraw-Hill; 2008: 1501-1509.
4. Rader DJ, Hobbs HH. Disorders of lipoprotein metabolism. In: Braunwald E, Fauci AS, Kasper KL, et al, eds.. Harrison's Principles of Internal Medicine. 17th ed. New York,
5. Grundy SM, Cleeman JI, Merz CN, et al. Implications of recent trials for the National Cholesterol Education Program Adult Treatment Panel III guidelines. Circulation. 2004; 110: 227-239.NY: McGraw-Hill; 2008: 2416-2429.

Key questions covered in lesson 2 . Clinical analysis of patients with angina.

Definition. Classification. Stable angina. Classification. Pathophysiology. Clinic. Typical and atypical forms of angina pectoris. Verification of the diagnosis. ECG. Holter ECG-monitoring. Load tests. Coronarography. Medical and non-drug methods of treatment. Angioplasty. Stenting. Coronary artery bypass grafting (CABG). Indications. Prevention.

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Antman EM, Selwyn AP, Braunwald E. Ischemic heart disease. In: Kasper DL,

4. Braunwald E, Fauci AS, et al., eds. Harrison's Principles of Internal Medicine. 17th ed.New York, NY: McGraw-Hill; 2008:1514-1532.
5. ACCF/AHA Task Force on Practice Guidelines. Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines. 2012. Availableat:http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf and http://my.americanheart.org/idc/groups/ ahamah-public/@wcm/sop

Key questions covered in lesson 3 . Clinical analysis of patients with acute coronary syndrome without ST segment elevation. Unstable angina.

Unstable angina. Definition. Pathophysiology. Clinic. Classification. Clinic. Verification of the diagnosis. Coronarography. Tactics of management of patients with unstable angina. Medical and surgical treatments. Earlier-invasive and earlier-medical treatment of ACS. Coronary artery bypass grafting (CABG).

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Antman EM, Selwyn AP, Braunwald E. Ischemic heart disease. In: Kasper DL,
4. Braunwald E, Fauci AS, et al., eds. Harrison's Principles of Internal Medicine. 17th ed.New York, NY: McGraw-Hill; 2008:1514-1532.
5. ACCF/AHA Task Force on Practice Guidelines. Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines. 2012. Availableat:http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf and http://my.americanheart.org/idc/groups/ ahamah-public/@wcm/sop

Key questions covered in lesson 4. Clinical analysis of patients with acute coronary syndrome with ST segment elevation. Acute myocardial infarction.

Definition. Pathophysiology. Classification. Clinical manifestations of AMI. The criteria of AMI. Clinical implications. ECG. Cardiospecific enzymes. The differential diagnosis of AMI with other forms KBS. Treatment of AMI in an acute period. Time - dependent treatment. Pharmacotherapy. Reperfusion. Angioplasty.

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Antman EM, Braunwald E. ST-segment elevation myocardial infarction. In: Kasper DL, Braunwald E, Fauci AS, et al., eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill; 2008:1532-1544.
4. Antman EM, Hand M, Armstrong PW, et al. 2007 focused update of the ACC/AHA 2004 guidelines for the management of patients with ST-elevation myocardial infarction. Circulation. 117(2):296-329.

Key questions covered in lesson 5. Clinical analysis of situational tasks involving mechanical and hemodynamic complications of acute myocardial infarction.

Arrhythmia and conduction. Cardiogenic shock. Acute heart failure. Definition. Pathophysiology. Clinic. Classification. Clinic. Treatments. Prevention. Prognosis.

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Antman EM, Braunwald E. ST-segment elevation myocardial infarction. In: Kasper DL, Braunwald E, Fauci AS, et al., eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill; 2008:1532-1544.
4. Antman EM, Hand M, Armstrong PW, et al. 2007 focused update of the ACC/AHA 2004 guidelines for the management of patients with ST-elevation myocardial infarction. Circulation. 117(2):296-329.

Key questions covered in lesson 6. Clinical analysis of situational tasks involving acute heart failure. Pulmonary edema. Cardiogenic shock. Cor pulmonale.

Definition. Etiology. Pathophysiology. Systolic and diastolic heart failure. Pre- and afterload. Clinical manifestations. Diagnostics. Classification. Treatment. Basic and additional agents. Prognosis. Prevention.

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Feldman T. Rheumatic mitral stenosis. On the rise again. Postgrad Med. 1993; 93: 93-104.
4. Lejemtel TH, Sonnenblick EH, Frishman WH. Diagnosis and management of heart failure. In: Fuster V, Alexander RX, O'Rourke RA, eds. Hurst's the Heart. 10th ed. New York, NY: McGraw-Hill; 2001: 6.
5. O'Gara P, Braunwald E. Valvular heart disease. In: Kasper DL, Braunwald E, Fauci AS, et al, eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill; 2008: 1465-1480.

Key questions covered in lesson 8 . Differential diagnosis of acquired valvular heart defects with a clinical patient analysis. Mitral valve stenosis and regurgitation.

Definition. Auscultation of the heart adults. Phonocardiography and ECG. Differential diagnosis of systolic murmur - functional and organic. Classification of heart valve disease. Pathophysiology Echocardiography and Doppler studies of the heart. Chest x-ray with heart defects. Classification of stages of heart valve disease. Indications for surgical

treatment. Minimally invasive techniques and prosthetic valves. Prevention of venous thromboembolism, and infective endocarditis.

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. O'Gara P, Braunwald E. Valvular heart disease. In: Kasper DL, Braunwald E, Fauci AS,et al, eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill; 2008:1465-1480.
4. Feldman T. Rheumatic mitral stenosis. On the rise again. Postgrad Med. 1993;93:93-104.
5. Lejemtel TH, Sonnenblick EH, Frishman WH. Diagnosis and management of heart failure. In: Fuster V, Alexander RX, O'Rourke RA, eds. Hurst's the Heart. 10th ed. New York, NY: McGraw-Hill; 2001:6.
6. Creager MA, Loscalzo J. Diseases of the aorta. In: Fauci AS, Braunwald E, Kasper DL,eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill;2008:1563-168.

Key questions covered in lesson 9 . Differential diagnosis of acquired valvular heart defects with a clinical patient analysis. Aortic and tricuspid valve stenosis and regurgitation.

Definition. Auscultation of the heart adults. Phonocardiography and ECG. Differential diagnosis of systolic murmur - functional and organic. Classification of heart valve disease. Pathophysiology Echocardiography and Doppler studies of the heart. Chest x-ray with heart defects. Classification of stages of heart valve disease. Indications for surgical treatment. Minimally invasive techniques and prosthetic valves. Prevention of venous thromboembolism, and infective endocarditis.

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. O'Gara P, Braunwald E. Valvular heart disease. In: Kasper DL, Braunwald E, Fauci AS,et al, eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill; 2008:1465-1480.
4. Feldman T. Rheumatic mitral stenosis. On the rise again. Postgrad Med. 1993;93:93-104.
5. Lejemtel TH, Sonnenblick EH, Frishman WH. Diagnosis and management of heart failure. In: Fuster V, Alexander RX, O'Rourke RA, eds. Hurst's the Heart. 10th ed. New York, NY: McGraw-Hill; 2001:6.
6. Creager MA, Loscalzo J. Diseases of the aorta. In: Fauci AS, Braunwald E, Kasper DL,eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill;2008:1563-168.

Key questions covered in lesson 10. Clinical patient analysis with infective endocarditis. Principles of antibacterial therapy, primary and secondary prevention.

Definition. Etiology and pathogenesis. Classification. The clinical picture. Complications. Diagnosis. Instrumental and immunological methods investigations. Prognosis. Treatment. Recommended reading for the lesson/unit: Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628. Lange RA, Hillis LD. Acute pericarditis. N Engl J Med. 2004; 351: 2195-220

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Wynne J, Braunwald E. Cardiomyopathy and myocarditis. In: Kasper DL, BraunwaldE, Fauci AS, et al, eds. Harrison's Principles of Internal Medicine. 17th ed. New York,

Key questions covered in lesson 11 . Clinical case study with various types of cardiomyopathy.

Cardiomyopathy Definition. Classification. Risk factors. Pathophysiology. Clinical manifestations of dilated and hypertrophic cardiomyopathy. Cardiac enzymes. Immunological tests. Diagnostic criteria. Tactics of treatment. Causal and patogentical therapy. Prognosis.

Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Wynne J, Braunwald E. Cardiomyopathy and myocarditis. In: Kasper DL, BraunwaldE, Fauci AS, et al, eds. Harrison's Principles of Internal Medicine. 17th ed. New York,
4. Asif M, Regan TJ. Congestive cardiomyopathy. In: Alpert JS, ed. Cardiology for the Primary Care Physician. 2nd ed. Stamford, CT: Appleton and Lange; 1998: 219-229.

Key questions covered in lesson 12. Clinical case study with pericarditis. Cardiac tamponade.

Definition. Etiology and pathogenesis. Classification. The clinical picture. Complications. Diagnosis. Instrumental and immunological methods investigations. Prognosis. Treatment. *Recommended reading for the lesson/unit:*

Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
Lange RA, Hillis LD. Acute pericarditis. N Engl J Med. 2004; 351: 2195-2202.

Key questions covered in lesson 13. Clinical patient analysis with chronic heart failure.
Definition. Etiology. Pathophysiology. Systolic and diastolic heart failure. Pre- and afterload. Clinical manifestations. Diagnostics. Classification. Treatment. Basic and additional agents. Prognosis. Prevention.
Recommended reading for the lesson/unit:

1. Harrison's Principles of Internal Medicine. 20th ed. New York, NY: McGraw-Hill; 2018: 229-233, 1911-2007.
2. Davidson's Principles of Internal Medicine. 23th ed. Elsevier; 2018: 545-628.
3. Feldman T. Rheumatic mitral stenosis. On the rise again. Postgrad Med. 1993; 93: 93-104.
4. Lejemtel TH, Sonnenblick EH, Frishman WH. Diagnosis and management of heart failure. In: Fuster V, Alexander RX, O'Rourke RA, eds. Hurst's the Heart. 10th ed. New York, NY: McGraw-Hill; 2001: 6.
5. O'Gara P, Braunwald E. Valvular heart disease. In: Kasper DL, Braunwald E, Fauci AS, et al, eds. Harrison's Principles of Internal Medicine. 17th ed. New York, NY: McGraw-Hill; 2008: 1465-1480.

Methodological instructions for the implementation of independent work on the discipline

1. Abstract: for each practical lesson, the student prepares materials on the topic, using the proposed literature. The amount of information on one topic is 3-5 pages (written by hand).
2. Control questions: the student must know the answers to the control questions about topic (orally, it is possible to make notes in a notebook)
3. Presentation: prepare 2-3 presentations of the student's choice on topics of independent work (limit 25-30 slides per presentation, works downloaded from the Internet are not accepted)
4. Table/poster: a group of 3-4 students prepares a poster on a specified topic according to the principle - differential diagnosis of diseases