

MINISTRY OF HEALTH PROTECTION OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY
Department of Internal Medicine No.1

CONFIRMED by
Vice-rector of scientific and pedagogical work
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September 1st, 2025



WORKING PROGRAM OF ACADEMIC DISCIPLINE
CURRENT ISSUES IN THE MANAGEMENT OF PATIENTS
WITH CARDIAC PATHOLOGY

Level of higher education: second (master's)

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Educational and professional program: Medicine

The work program is based on the educational and professional program "Medicine" for training specialists of the second (master's) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Healthcare", approved by the Academic Council of ONMedU (minutes No. 10 of June 27, 2024) and the educational and professional program "Medicine" for training specialists of the second (master's) level of higher education in the specialty I 2 "Medicine" of the field of knowledge I "Healthcare and Social Security", approved by the Academic Council of ONMedU (minutes No. 10 of June 26, 2025).

Authors:

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The working program was approved at the meeting of the department of Internal Medicine No.1 Protocol No.1 dated 28.08.2025

Head of the department

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Approved by the guarantor of
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Approved by the subject cycle methodical commission for therapeutic disciplines of ONMedU Protocol No.1 dated 29.08.2025

Head of the subject cycle methodical commission

 Olena VOLOSHYNA

Revised and approved at a meeting of the department of Internal Medicine №1 Protocol No. __ dated «__» _____ 20__

Head of department

_____ Yuri KARPENKO

Revised and approved at a meeting of the department of the department of Internal Medicine №1 Protocol No. __ dated «__» _____ 20__

Head of Department

_____ Yuri KARPENKO

1. Description of the academic discipline

Indications	Discipline, speciality, level of higher education	Characteristics of academic discipline
Total amount:	Discipline 22 «Health care»	<i>Full-time education</i>
Credits: 3	Speciality	<i>Elective discipline</i>
Hours: 90	222 «Medicine»	<i>Year of training: 4</i>
Content	Level of higher education	<i>Semester VII - VIII</i>
Modules:1	second (master)	<i>Lectures(0 h.)</i>
		<i>Seminar (0 h.)</i>
		<i>Practical(30 h.)</i>
		<i>Laboratory(0 h.)</i>
		<i>Self-working (60 h.)</i>
		<i>The form of the final control - test</i>

2. The purpose and tasks of the educational discipline, competences, program learning outcomes.

Purpose: Mastering of knowledge and formation of elements of professional competences in the field of cardiology and improvement of skills and competences acquired during the study of previous disciplines.

Task:

1. Formation of skills in clinical examination of patients with major diseases of the cardiovascular system and analyzing their results;
2. Formation of skills in justification of clinical diagnosis, making a plan for laboratory and instrumental diagnostic of patients with the most common diseases of the cardiovascular system and their complications;
3. Mastering the skills to determine the tactics of treatment and prevention of the most common diseases of the cardiovascular system and their complications.

The process of studying is aimed at forming elements of the following competencies:

General (GC)

- GC1 – Ability to abstract thinking, analysis and synthesis.
- GC2. Ability to learn and master modern knowledge
- GC3 – Ability to apply knowledge in practical situations.
- GC4 – Knowing and understanding of the subject area and understanding of professional activity.
- GC 5 – Ability to adapt and act in a new situation.
- GC 6 – Ability to make justified decisions.
- GC 7 – Ability to work in a team.
- GC 8 – Ability to interpersonal interaction.
- GC 9. Ability to communicate in a foreign language
- GC 10. Ability to use information and communication technologies
- GC 11 – Ability to search, process and analyze information from various sources.
- GC 12 – Determination and persistence to the assigned tasks and responsibilities.
- GC 13 – Awareness of equal opportunities and gender conflicts.

ZK14. The ability to realize rights and responsibilities as a member of society, to be aware of the values of a public (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen of Ukraine

ZK15. The ability to keep and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of physical activity for active rest and keeping a healthy lifestyle

ZK17. The desire to preserve the environment

Special (SC):

SC1. Ability to collect medical information about the patient and analyze clinical data

SC2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results

SC3. Ability to establish a preliminary and clinical diagnosis of the disease

SC4. The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases

SC5. The ability to determine type of nutrition in the treatment and prevention of diseases

SC6. Ability to determine the principles of treatment and prevention of diseases

SC7. Ability to diagnose emergency conditions

SC8. Ability to determine tactics and provide emergency medical care

SC9. Ability to carry out medical evacuation measures

SC10. Ability to perform medical manipulations

SC11. Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility, including an early intervention system.

SC13. Ability to carry out sanitary and hygienic and preventive measures

SC14. Ability to plan and carry out preventive and anti-epidemic measures for infectious diseases

SC15. The ability to conduct an examination of working capacity

SC16. Ability to maintain medical documentation, including electronic forms

SC17. The ability to evaluate the influence of the environment, socio-economic and biological determinants on the health of person, family, population

SC18. The ability to analyze the activity of a doctor, unit, health care institution, ensure the quality of medical care and increase the efficiency of the use of medical resources

SC20. Ability to conduct epidemiological and medical statistical studies of the health of the population; processing of social, economic and medical information

SC21. The ability to convey knowledge, conclusions and arguments on health care problems and related issues clearly and unambiguously to specialists and non-specialists, in particular to people who are studying

SC23. Ability to develop and implement scientific and applied projects in the field of health care

SC24. Adherence to ethical principles when working with patients and laboratory animals

SC25. Adherence to professional and academic integrity, to be responsible for the reliability of the scientific results

SC26. The ability to determine the management tactics of persons needed for dispensary registration

SC28. Ability to apply fundamental biomedical knowledge at a level needed to perform professional tasks in the field of health care

Program learning outcomes (PLO):

PLO 1 - Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.

PLO 2 - Understanding and knowing the fundamental and clinical biomedical sciences, at a level needed for solving professional tasks in the field of health care.

PLO3 - Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for making a research, critical understanding of problems in the field of medicine and related interdisciplinary problem, including an early intervention system

PLO 4 - Identify leading clinical symptoms and syndromes (according to list 1); by standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, to establish a preliminary clinical diagnosis of the disease (according to list 2).

PLO5 - Collect complaints, life history and medical history, evaluate mental and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis (according to list 4), considering the age of the patient.

PLO 6 - To establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under control of the managing physician in a health care institution (according to list 2).

PLO 7 - Prescribe and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and systems for differential diagnosis of diseases (according to list 2).

PLO 8 - Determine the main clinical syndrome or symptom that determines the severity of the patient's condition (according to list 3) by making a reasoned decision about the person's condition under any circumstances (in a health care institution, or outside it), including emergency conditions and hostilities, in field conditions, in conditions of lack of information and limited time.

PLO 9 - Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2) considering the age of the patient, in a health care institution, outside it and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, observing relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of necessary expanding the standard scheme, be able to explain personalized recommendations under control of the head physician in a medical institution.

PLO 10 - Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.

PLO 12 - To assess the general condition of the patient by making a reasoned decision according to existing algorithms and standard schemes, observing the relevant ethical and legal norms.

PLO 14 - Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time conditions according to existing clinical protocols and standards of treatment.

PLO 15. To organize the medical aid and medical evacuation of the civilians and military personnel in emergency situations and hostilities, including in field conditions

PLO 16. Form rational medical routes for patients; organize interaction with colleagues in their own and other institutions and organizations; to apply tools for the promotion of medical services in the market, based on the analysis of the needs of the population, in the conditions of the functioning of the health care institution, its division, in a competitive environment.

PLO 17 - Perform medical manipulations (according to list 5) in the health care institution, at home or at work based on a previous clinical diagnosis and / or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.

PLO 18. To determine the state of functioning and limitations of a person's vital activities and the duration of inability for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of a person's professional activity, etc. Maintain medical documentation of the patient and the contingent of the population on the basis of regulatory documents.

PLO 19. Plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.

PLO 21 - Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.

PLO 22. Apply modern digital technologies, specialized software, and statistical data analysis methods to solve complex healthcare problems.

PLO23. Assess the impact of the environment on human health to assess the morbidity of the population.

PLO24. To organize the necessary level of individual safety (own and the persons cared for) in case of typical dangerous situations in the individual field of activity.

PLO25. Clearly and unambiguously convey own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.

PLO27. Communicate freely in native language and in English, both orally and in writing to discuss professional activities, research and projects.

PRN30. Determine the management tactics of persons needed of dispensary registration (children, pregnant women, workers whose professions require mandatory dispensary examination).

PRN31. To determine the management tactics of persons suffering from chronic infectious diseases needed of dispensary registration

As a result of studying the academic discipline, the student of higher education must:

Know: General questions of internal medicine, etiology, pathogenesis, clinic, diagnosis, treatment, prevention of common diseases of the cardiovascular system.

Be able:

- Collect data on patient complaints, medical history, life history of patients with diseases of the cardiovascular system and their complications;
- Evaluate information about the diagnosis using a standard procedure, based on the results of laboratory and instrumental studies. Determine the list of necessary clinical laboratory and instrumental studies and evaluate their results (according to list 4).
- Select the leading clinical symptom or syndrome (according to list 1). Establish a preliminary diagnosis, carry out differential diagnosis and determine the clinical diagnosis of the disease (according to list 3).
- Determine the principles of treatment of diseases, the necessary regime of work and rest, the kind of nutrition (according to list 2).
- Diagnose emergency conditions (according to list 3).
- Determine tactics and provide emergency medical assistance (according to list 3).

Master the skills:

- Communication and clinical examination of the patient
- Perform medical manipulations (according to list 5) in diseases of the cardiovascular system.
- Maintain medical documentation.

3. Content of the academic discipline

Content module 1. Management of patients with cardiac pathology

Topic 1. Management of a patient with arterial hypertension. Hypertensive crises, peculiarities of treatment tactics

Differential diagnosis of arterial hypertension: essential and secondary. Risk stratification of cardiovascular complications and determination of prognosis. Making an examination plan. Patient management tactics depending on the risk group.

Principles of non-drug and drug treatment of arterial hypertension. Drugs of the first and second line of treatment. Modern recommendations about the choice of antihypertensive drugs. Existing standards of treatment. Monotherapy and combined therapy. Side effects of hypotensive drugs.

Hypertensive crises, peculiarities of treatment tactics. Primary and secondary prevention. Forecast and performance.

Topic 2. Management of a patient with cardiac pain.

Differential diagnosis of angina pectoris and cardiac pain in diseases of the heart, respiratory, digestive, musculoskeletal system, etc. Making an examination plan, additional laboratory and instrumental examination methods. Patient management tactics depending on the genesis of cardialgia.

Management of a patient with stable angina pectoris. Typical and atypical angina pectoris, diagnostic criteria. Making an examination plan, additional laboratory and instrumental methods of examination (ECG with physical exercises, daily Holter monitoring, stress-Echo-CG, coronary angiography). Patient management tactics depending on the functional class. Existing standards of treatment. Endovascular and surgical methods of treatment.

Management of a patient with painless myocardial ischemia. Risk of sudden coronary death. Making an examination plan, additional laboratory and instrumental methods of examination (ECG with physical exercises, daily Holter monitoring, stress-Echo-CG, coronary angiography). Patient management tactics.

Topic 3. Management of a patient with acute coronary syndrome. Management of a patient with shortness of breath.

The risk of myocardial infarction. Assistance at the pre-hospital and hospital stages. Making an examination plan, additional laboratory and instrumental methods of examination (biochemical markers, ECG with exercise, daily Holter monitoring, stress-Echo-CG, coronary angiography) and patient management tactics depending on ECG changes.

Existing standards of treatment of myocardial infarction.

Differential diagnosis of shortness of breath and suffocation. Making an examination plan, additional laboratory and instrumental methods of examination (standard ECG and ECG with physical load, Echo-CG, daily Holter monitoring, X-ray of the lungs and heart, functional breathing tests). Patient management tactics depending on the genesis of shortness of breath. Non-drug, drug and surgical treatment

Topic 4. Management of a patient with heart murmurs. Management of a patient with cardiomegaly. Management of a patient with heart failure

Differential diagnosis of functional and organic, systolic and diastolic murmurs. Making an examination plan, additional instrumental methods of examination (x-ray of the lungs and heart,

ECG, Echo-CG, coronary angiography). Patient management tactics depending on the cause of the heart murmur, severity of cardiomegaly, presence of heart failure and other complications. Non-drug, drug and surgical treatment.

Differential diagnosis of cardiomegaly in heart defects, myocarditis, cardiomyopathies, coronary artery disease. Making an examination plan, additional instrumental methods of examination (x-ray of the lungs and heart, ECG, Echo-CG, coronary angiography). Patient management tactics. Non-drug, drug and surgical treatment.

Right ventricular, left ventricular and biventricular heart failure. Differential diagnosis depending on the leading cause. Making an examination plan, additional instrumental methods of examination (x-ray of the lungs and heart, ECG, Echo-CG, coronary angiography). Patient management tactics depending on the genesis, functional class and stage of heart failure. Non-drug, drug and surgical treatment. Existing standards of treatment.

Topic 5. Management of a patient with a heart rhythm disorder. Management of a patient with impaired cardiac conduction.

Differential diagnosis of atrial and ventricular extrasystoles, atrial fibrillation, sinus node weakness and Wolff-Parkinson-White syndromes. Making an examination plan, additional laboratory and instrumental examination methods (ECG, 24-hour Holter monitoring, Echo-CG, electrophysiological examination).

Patient management tactics. The main classes of antiarrhythmic agents, indications for their use, side effects. Existing standards of treatment. Electropulse therapy. Surgical methods of treating arrhythmias.

Disorders of atrioventricular conduction, AV blocks of various degrees. Frederick's syndrome. ECG diagnosis of Hiss's bundle branch block. Patient management tactics, additional laboratory and instrumental examination methods. Drug treatment and cardiac stimulation. Artificial rhythm drivers.

4. The structure of the academic discipline

Topic	Hours					
	Total	Including				
		lectures	seminars	practical	laboratory	SSW
Content module 1.						
Basics of diagnosis, treatment and prevention of major diseasescardiovascular system						
Topic 1: Management of a patient with arterial hypertension. Hypertensive crises, peculiarities of treatment tactics	18	0	0	6	0	12
Topic2: Management of a patient with cardiac pain	18	0	0	6	0	12
Topic 3: Management of a patient with acute coronary syndrome. Management of a patient with shortness of breath.	18	0	0	6	0	12

Topic 4: Management of a patient with heart murmurs. Management of a patient with cardiomegaly. . Management of a patient with heart failure.	18	0	0	6	0	12
Topic 5: Management of a patient with a heart rhythm disorder. Management of a patient with impaired cardiac conduction.	18	0	0	6	0	12
Hours	90	0	0	30	0	60

5. Topics of lectures / seminars / practical / laboratory classes

5.1. Topics of lectures

Lectures are not provided

5.2. Topics of practical classes.

№	Topic	Hours
1.	Topic 1. Practical lesson 1 Management of a patient with arterial hypertension. Differential diagnosis of arterial hypertension: essential and secondary Risk stratification of cardiovascular complications and determination of prognosis. Making an examination plan. Patient management tactics depending on the risk group.	2
2.	Topic 1. Practical lesson 2. Management of a patient with arterial hypertension. Principles of non-drug and drug treatment of arterial hypertension. Drugs of the first and second line of treatment. Modern recommendations in the choice of antihypertensive drugs. Existing standards of treatment. Monotherapy and combined therapy. Side effects of hypotensive agents.	2
3.	Topic 1. Practical lesson 3. Hypertensive crises, peculiarities of treatment tactics. Primary and secondary prevention. Forecast and performance.	2
4.	Topic 2. Practical lesson 4. Management of a patient with cardiac pain. Differential diagnosis of angina pectoris and cardiac pain in diseases of the heart, respiratory, digestive, musculoskeletal system, etc. Making an examination plan, additional laboratory and instrumental examination methods. Patient management tactics depending on the genesis of cardialgia.	2
5.	Topic 2. Practical lesson 5. Management of a patient with stable angina pectoris. Typical and atypical angina pectoris, diagnostic criteria. Making an examination plan, additional laboratory and instrumental diagnostics (ECG with physical exercises, daily Holter monitoring, stress-Echo-CG, coronary angiography). Patient management	2

	tactics depending on the functional class. Existing standards of treatment. Endovascular and surgical methods of treatment.	
6.	Topic 2. Practical lesson 6. Management of a patient with painless myocardial ischemia. Risk of sudden coronary death. Making an examination plan, additional laboratory and instrumental methods of examination (ECG with physical exercises, daily Holter monitoring, stress-Echo-CG, coronary angiography). Patient management tactics.	2
7.	Topic 3. Practical lesson 7. Management of a patient with acute coronary syndrome. The risk of myocardial infarction. Assistance at the pre-hospital and hospital stages. Making an examination plan, additional laboratory and instrumental methods of examination (biochemical markers, ECG with exercise, daily Holter monitoring, stress-Echo-CG, coronary angiography) and patient management tactics depending on ECG changes.	2
8.	Topic 3. Practical lesson 8. Existing standards of treatment of myocardial infarction. Prehospital stage of treatment. Protocol of actions in the cardiology hospital. Surgical treatment	2
9.	Topic 3. Practical lesson 9. Management of a patient with shortness of breath. Differential diagnosis of shortness of breath and suffocation. Making an examination plan, additional laboratory and instrumental methods of examination (standard ECG and ECG with physical exercises, Echo-CG, daily Holter monitoring, X-ray of the lungs and heart, functional breathing tests). Patient management tactics depending on the genesis of shortness of breath. Non-drug, drug and surgical treatment.	2
10.	Topic 4. Practical lesson 10. Management of a patient with heart murmurs. Differential diagnosis of functional and organic, systolic and diastolic murmurs. Making an examination plan, additional instrumental diagnostics (x-ray of the lungs and heart, ECG, Echo-CG, coronary angiography). Patient management tactics depending on the cause of the heart murmur, severity of cardiomegaly, presence of heart failure and other complications. Non-drug, drug and surgical treatment.	2
11.	Topic 4. Practical lesson 11. Management of a patient with cardiomegaly. Differential diagnosis of cardiomegaly in heart defects, myocarditis, cardiomyopathies, coronary artery disease. Making an examination plan, additional instrumental methods of examination (x-ray of the lungs and heart, ECG, Echo-CG, coronary angiography). Patient management tactics. Non-drug, drug and surgical treatment.	2
12.	Topic 4. Practical lesson 12. Management of a patient with heart failure. Right ventricular, left ventricular and biventricular heart failure. Differential diagnosis depending on the leading cause. Making an examination plan, additional instrumental methods of examination (x-ray of the lungs and heart, ECG, Echo-CG, coronary angiography). Patient management tactics depending on the genesis, functional class and stage of heart failure. Non-drug, drug and surgical treatment. Existing standards of treatment.	2
13.	Topic 5. Practical lesson 13. Management of a patient with a heart rhythm disorder. Differential diagnosis	2

	of atrial and ventricular extrasystoles, atrial fibrillation, sinus node weakness and Wolff-Parkinson-White syndromes. Making an examination plan, additional laboratory and instrumental examination methods (ECG, 24-hour Holter monitoring, Echo-CG, electrophysiological examination).	
14.	Topic 5. Practical lesson 14. Tactics of managing patients with heart rhythm disorders. The main classes of antiarrhythmic agents, indications for their use, side effects. Existing standards of treatment. Electropulse therapy. Surgical methods of treating arrhythmias.	2
15.	Topic 5. Practical lesson 15. Management of a patient with impaired cardiac conduction. Violations of atrioventricular conduction, AV blocks of various degrees. Frederick's syndrome. ECG diagnosis of Hiss' bundle branch block. Patient's management tactics, additional laboratory and instrumental examination methods. Drug treatment and cardiac stimulation. Artificial rhythm drivers. TEST	2
Total		30

5.3 Topics of seminar classes

The program does not include seminar classes

5.4. Topics of laboratory classes

Laboratory classes are not provided.

6. Self students' work

№	Topic / types of tasks	Hours
1	Topic 1. Preparation for practical classes 1-3	12
2	Topic 2. Preparation for practical classes 4-6	12
3	Topic 3. Preparation for practical classes 7-9	12
4	Topic 4. Preparation for practical classes 10-12	12
5	Topic 5. Preparation for practical classes 13-15	12
TOTAL		60

7. Teaching methods

Practical classes: conversation, role-playing, solving clinical situational problems, practicing patient examination skills, demonstrating and practicing the skills of performing manipulations according to list 5, training exercises on differential diagnosis of cardiac diseases.

Self-work: independent work with the recommended basic and additional literature, with electronic information resources, independent work with the bank of test tasks Step-2, independent mastering of the algorithms of clinical examination of the patient.

8. Forms of control and assessment methods (including criteria for evaluating learning outcomes)

Current control: oral survey, testing, assessment of communication skills during role play, solving situational clinical tasks, assessment of activity in class.

Final control: credit test.

Evaluation of the current educational activity in a practical session:

1. Evaluation of theoretical knowledge on the subject of the lesson:

- methods: survey, solving a situational clinical problem

- maximum score – 5, minimum score – 3, unsatisfactory score – 2.

2. Assessment of work with the patient on the topic of the lesson:

- methods: assessment of: a) skills of communication with the patient,

b) the correctness of the prescribing and evaluation of laboratory and instrumental studies, c) compliance with the differential diagnosis algorithm, d) justification of the clinical diagnosis, e) making a treatment plan;

- maximum score – 5, minimum score – 3, unsatisfactory score – 2.

The grade for one practical session is the average score of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

Current evaluation criteria in practical training

Score	Evaluation criteria
«5»	The applicant is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates skills during patient examination and interpretation of clinical, laboratory and instrumental data, expresses his opinion on the lesson, demonstrates clinical thinking.
«4»	The applicant masters the material good, participates in the discussion and solution of a situational clinical problem, demonstrates skills during patient examination and interpretation of clinical, laboratory and instrumental data with some errors, expresses his opinion on the subject of the class, demonstrates clinical thinking.
«3»	The applicant does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of a situational clinical problem, demonstrates skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental data with significant errors.
«2»	The applicant does not master the material, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental data.

A credit is awarded to an applicant who has completed all the tasks of the work program of the academic discipline, actively participated in practical classes, completed and defended an individual assignment and has an average current grade of at least 3.0 and has no academic debt.

Credit is given: at the last lesson. The credit score is the arithmetic mean of all components on a traditional four-point scale and has a value that is rounded using the statistical method to two decimal places.

9. Distribution of points received by applicants of higher education

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

Conversion table of a traditional assessment into a multi-point scale

Traditional four-point scale	Multipoint 200-point scale
Excellent ("5")	185 - 200
Good ("4")	151 - 184

Satisfactory ("3")	120-150
Unsatisfactory ("2")	Below 120

A multi-point scale (200-point scale) characterizes the actual success of each applicant in learning the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Applicants who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to applicants who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is assigned to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Conversion of traditional course grade and total points into ECTS scale

Evaluation on the ECTS scale	Statistical indicator
A	Top 10% applicants
B	The next 25% of applicants
C	The next 30% of applicants
D	The next 25% of applicants
E	The next 10% of applicants

10. Methodological support

- Working program of the academic discipline
- Syllabus
- Methodological developments for practical classes
- Methodical recommendations for self work
- Multimedia presentations
- Situational clinical tasks
- Scenarios of role-playing games (if necessary)
- Electronic bank of test tasks by subdivisions of the discipline
- Educational and methodical literature

1. Karpenko Y.I., Zolotaryova N.A., Savelieva O.V., etc. Current issues in the management of patients with cardiac pathology: methodological recommendations for practical classes for applicants of higher education of the 4th year of the second master's level of the specialty "Medicine" / methodological recommendations for practical classes Odesa, ONMedU, 2025. 24 p.

2. Karpenko Y.I., Zolotaryova N.A., Savelieva O.V., etc. Current issues in the management of patients with cardiac pathology: methodological recommendations for independent work of applicants of higher education of the 4th year of the second master's level of the specialty

11. Questions for preparation for the test.

1. Essential arterial hypertension (hypertensive disease). Definition. Classification. Clinical manifestations and data of additional examination methods. Damage to target organs. Differential diagnosis. Complication. Treatment.
2. Complicated and uncomplicated hypertensive crises, peculiarities of treatment tactics.
3. Chronic forms of coronary heart disease (CHD). Definition of CHD. Etiology. Classification of CHD. Features of the clinical course and diagnosis of various variants of stable angina pectoris.
4. Painless form of CHD, post-infarction and diffuse atherosclerosis. Features of clinical manifestations. Criteria for making a diagnosis. Differentiated therapy of various forms of CHD. Prognosis-modifying therapy.
5. Acute coronary syndrome (unstable angina and acute myocardial infarction). Definition. Classification.
6. Features of the clinical course and diagnosis of acute myocardial infarction. Diagnosis criteria.
7. Complications of acute myocardial infarction (acute left ventricular failure, heart rhythm and conduction disturbances, myocardial rupture, acute heart aneurysm, Dressler's post-infarction syndrome, etc.). Diagnostics. Treatment tactics in different periods of acute myocardial infarction. Prognosis-modifying therapy. Indications for surgical treatment. Rehabilitation.
8. Acquired heart defects. Definition. Defects of mitral, aortic, tricuspid valves. Etiology, mechanisms of hemodynamic disorders. Classification. Clinical manifestations. Differential diagnosis. Complication. Treatment.
9. Myocarditis and cardiomyopathies. Definition. Classification. Etiology and pathogenesis of the main types of cardiomyopathies (inflammatory, metabolic, idiopathic). Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Features of treatment of various cardiomyopathies.
10. Disorders of heart rhythm. Definition. Etiology. Classification.
11. Electrophysiological mechanisms of arrhythmias (extrasystole, atrial fibrillation and flutter, ventricular tachycardia and ventricular fibrillation). Clinic, ECG diagnosis and differential diagnosis. Complication. Drug and non-drug methods of treatment. The role of electroimpulse therapy.
12. Emergency therapy for paroxysmal rhythm disturbances and sudden cardiac arrest. Forecast and performance.
13. Disorders of heart conduction. Definition. Etiology. Classification. Clinic and ECG diagnosis of atrioventricular blocks and His' bundle branch blocks .
14. Tactics for acute and chronic conduction disorders. Emergency care for attacks of Morgagni-Adams-Stokes. Indications and principles of electrocardiostimulation (temporary, permanent). Primary and secondary prevention. Forecast and performance.
15. Chronic heart failure. Definition. The main reasons. Pathogenesis of central and peripheral hemodynamic disorders in various forms (left and right heart failure). The role of neurohumoral activation and cardiac remodeling. Classification. Clinical manifestations and their features depending on the variant (systolic, diastolic), stage and functional class. Diagnostics. The importance of laboratory and instrumental research methods. Prognosis-modifying therapy. Primary and secondary prevention. Forecast and performance.

12. Recommended literature

Main:

1. Internal diseases: in 2 p. Part 1: Chapters 1–8: Nat. textbook for intern doctors, med.students of IHE, medical practitioners of therap. profile. Recommended by the academic council of IFNMU / L.V. Hlushko, S.V. Fedorov, I.M. Skrypnyk and others; under the editorship L.V. Hlushko. — K., 2020. — 680 p., hard cover, (art. 5 p.).
2. Modern classifications and standards of treatment of diseases of internal organs. Emergency conditions in therapy. Analyses. Normative indicators. Interpretation of changes. /Edited by Prof. Yu.M. Mostovoy. – 29th ed., additions and revisions. – Vinnytsia: publisher Kostyushin V.V. 2023. - 799 p.
3. Internal diseases: in 2 h. Part 2: Chapters 9–24: Nat. textbook for intern doctors, med.students of IHE, medical practitioners of therap. profile. Recommended by the academic council of IFNMU / L.V. Hlushko, S.V. Fedorov, I.M. Skrypnyk and others; under the editorship L.V. Hlushko. — K., 2022. — 680 p. hard cover., (art. 5 pr.).
4. Diagnostic methods in the clinic of internal medicine: Training book for medical practitioners, family physicians, graduate students, med.students of IHE. Recommended by the academic council of NMU named after O.O. Bogomolets / A.S. Svintsitskyi — K., 2020. — 1008 p. + 80 p. color incl., hard cover., (art. 3pr.).
5. Internal diseases: Textbook based on the principles of evidence-based medicine 2021 Project manager Alexandra Kubets, head. ed. Adriana Yaremchuk-Kochmarik, Anatoly Svintsytskyi; trans. from Polish – Kraków: Practical medicine, 2021. – 1632 p.
6. Cardiovascular diseases. Classification, standards of diagnosis and treatment // Edited by V.M. Kovalenko, M.I. Lutai, Y.M. Sirenko, O.S. Sychova, 4th ed., redone and supplemented - K.: Morion, 2021. - 224 p.

Additional

1. Harrison's Principles of Internal Medicine, Twentieth Edition (Vol.1 & Vol.2). Anthony S. Fauci, Larry Jameson, McGraw-Hill Education, New York, 2020
2. 2023 ESC/ESH Hypertension Guidelines.
3. Unified clinical protocol for providing primary, emergency and secondary medical care "Hypertension" (2016), European Society of Hypertension and European Society of Cardiology (2021 ESH/ESC), American Heart Association, 2023.

13. Electronic information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine
2. www.ama-assn.org – American Medical Association
3. www.who.int - World Health Organization
4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine
5. <http://bma.org.uk> - British Medical Association

