

Department of Internal Medicine N 1

Department of Internal Medicine N 2



Approved

First Vice-Rector for scientific and pedagogical work

Assoc. prof. Iryna SOLONYNKO

" 30 " 08 2023

**WORK PROGRAMME OF THE EDUCATIONAL
ELECTIVE DISCIPLINE**

"Current issues of cardiology"

ББ 1.85.

6 years of study

training of specialists of the second (master's) level of higher education

Field of Knowledge 22 "Health care"

specialties 222 "Medicine"

Discussed and approved
on the methodical meetings
of the Departments of
Internal Medicine N 1 and
Internal Medicine N 2
protocol N 9
dated 18.04.2023

Approved
by the Profile Methodical Council
on the therapeutic disciplines
protocol N 3 dated 04.05.2023

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The work programme for the elective discipline «**Current issues of cardiology**» (BБ1.85) for the 6th year students, who study in the specialty 222 Medicine (Internal Medicine, Surgery, Gynecology, Preventive Medicine), is composed by the staff of the Department of Internal Medicine No 2 Danylo Halytsky Lviv National Medical University: the Head of the department, Associate Professor Komarytsya O.Y.; Professor Radchenko O.M., Associate Professor Korolyuk O. Y., Assistant Professor Slaba O.R.

Editors Associate Professor Komarytsya O.Y.; Professor Radchenko O.M.

Reviewers: Head of Department Propaedeutic of Internal Diseases Professor Dutka R.Ya.

The work programme was discussed and approved by the Profile Methodical Council of therapeutic disciplines Danylo Halytsky Lviv National Medical University.

Changes and additions to the work programme in 2023-2024 academic year

| No | Content of the changes (additions) | Date and number of protocol of the methodical meeting of the department | Notes |
|----|------------------------------------|---|-------|
| | Not changed | | |

The Head of the Department of Internal Medicine No 2

Associate Professor Orest KOMARYTSYA



INTRODUCTION

The study program of the academic discipline "**Actual issues of cardiology**" (BB 1.85) for the training of specialists of the second master's level of higher education in the field of knowledge 22 "Health care" specialty 222 "Medicine" was compiled on the basis of the Law of Ukraine "On Higher Education", "The Procedure for Training Graduates of Higher Education education of the master of medicine in higher primary institutions", of the Standard of higher education - master of medicine in the field of knowledge 22 "Health care"; specialty 222 "Medicine" (Order of the Ministry of Education, Culture, Sports and Science of 08.11.2021); Order of the Ministry of Education and Culture of Ukraine dated October 1, 2019 No. 1254 "On Amendments to the Methodological Recommendations on the Development of Higher Education Standards"; Order of LNMU dated February 15, 2023 "On the implementation of the training plan for applicants of the second (master's) level of higher education in the specialty 222 Medicine."

Description of the academic discipline (abstract). The prevalence of diseases of the cardiovascular system requires a graduate of the medical faculty to have knowledge of modern methods of diagnosis and treatment of cardiac patients, regardless of the further profile of practical activity. Heart diseases most often lead to disability and death of patients. Timely diagnosis and treatment are conditions for preventing the development of complications of cardiac pathology. The elective course "Current issues of cardiology" covers the study of the main factors of cardiovascular pathology, including rare ones, and consolidates knowledge related to the diagnosis and treatment of cardiac pathologies. Provides in-depth knowledge of differential diagnosis and subtleties of treatment of not only the main pathologies of the cardiovascular system, but also their complications, consolidates practical skills in planning strategy and tactics of cardiovascular prevention and teaches how to determine the prognosis. In addition, students acquire the ability to conduct a scientific analysis of scientific publications and foreign recommendations on patient management.

The structure of the discipline

The program is part of the educational program for the preparation of masters of medicine and is calculated for 3 ECTS credits

| The structure of the academic discipline | Amount of credits, hours, particularly | | | Year | Type of control | |
|--|--|------------------|-----------|------|-----------------|------------|
| | Totally | Classroom, hours | | | | IWS, hours |
| | | Lectures | Practices | | | |
| "Current issues of cardiology" | 3,0 credit ECTS/90 h. | 0 | 36 | 54 | VI credit | |

The subject of study of the academic discipline is approaches to planning strategies and tactics of treatment of an individual patient, groups of patients and the organization of therapeutic and preventive measures in internal medicine.

"Current issues of cardiology" as an educational discipline:

a) It is based directly on the students' study of propaedeutics of internal medicine, propaedeutics of other clinical disciplines (pediatrics, general surgery), as well as other basic disciplines (medical biology, medical and biological physics, bioorganic and biological chemistry, histology, cytology and embryology, human anatomy, pathomorphology, physiology and pathophysiology, microbiology, virology and immunology, radiology) and integrates with these disciplines.

b) Lays the foundation for students' assimilation of knowledge in specialized clinical professional and practical disciplines.

c) Forms the ability to apply knowledge of the pathology of internal organs in the process of further education and professional activity in accordance with the principles of evidence-based medicine.

Interdisciplinary connections are based on the study by students of the anatomical foundations of the structure of the heart and blood vessels, physiological and pathophysiological mechanisms of the occurrence of cardiovascular diseases, pharmacokinetics and pharmacodynamics of drugs used for the treatment of cardiovascular diseases, methods of examination and detection of leading syndromes and symptoms in patients with pathology heart and blood vessels.

1. The purpose and tasks of the educational discipline

1.1. The purpose of teaching the academic discipline "Current issues of cardiology" is to deepen the student's knowledge and practical skills in working with a patient with cardiac pathology. Consolidate the ability to diagnose acute myocardial infarction and its complications (acute coronary syndrome, X and Y coronary syndromes), heart failure, infectious endocarditis, arterial hypertension, recognize rhythm and conduction disorders. Carry out differential diagnosis of pathologies of the cardiovascular system. Prescribe adequate laboratory-instrumental research and therapy in accordance with modern standards and scientific achievements. Get

acquainted with valuable rare methods of examination and treatment. To be able to interpret the data of electrocardiography and other instrumental studies in various pathologies of the cardiovascular system.

1.2. The main tasks of studying the discipline are:

Learn the clinical manifestations of diseases of the cardiovascular system, identify the presence of criteria for their diagnosis in the patient; carry out differential diagnosis of the main syndromes and nosologies; determine the stages of the course of cardiovascular diseases, their prognosis, learn methods of treatment and prevention.

Examine a patient with diseases of the cardiovascular system, interpret the obtained data of laboratory and instrumental examination, formulate and justify a preliminary diagnosis.

Choose methods of additional laboratory-instrumental examinations adequate for each case, analyze and summarize the obtained results, find deviations from the norm in their values and use them to substantiate the clinical diagnosis.

Separate the symptoms of the patient's illness that are not characteristic of a certain nosology, analyze the probable cause of their occurrence, formulate the features of the course of the patient's illness.

Document the medical history of the examined patient, create your own reports on the diagnostic significance of specific laboratory and instrumental research methods for the diagnosis of studied diseases of cardiovascular pathology, plan treatment taking into account regulatory documents and the latest scientific data, determine the stages of prevention of the development of these diseases.

Be able to provide emergency care for cardiogenic shock, hypertensive crises, hypotension, acute rhythm and conduction disturbances, and thromboembolic complications of cardiovascular pathology.

1.3. Competences and learning outcomes, the formation of which ensures the study of the discipline

General competences (GC):

1. GC 1 Ability to abstract thinking, analysis and synthesis.
2. GC 2 The ability to learn and master modern knowledge.
3. GC 3 Ability to apply knowledge in practical situations.
4. GC 4 Knowledge and understanding of the subject field and understanding of professional activity.
5. GC 5 Ability to adapt and act in a new situation.
6. GC 6 Ability to make informed decisions.
7. GC 7 Ability to work in a team.
8. GC 8 Ability to interpersonal interaction.
9. GC 10 Ability to use information and communication technologies.
10. GC 11 Ability to search, process and analyze information from various sources.
11. GC 12 Determination and persistence in relation to assigned tasks and assumed responsibilities.
12. GC 13 Awareness of equal opportunities and gender issues.
13. GC 14 The ability to realize one's rights and responsibilities as a member of society, to realize the values of civil society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.
14. GC 15 the ability to preserve 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 technology, to use various types and forms of motor activities for active recreation and leading a healthy lifestyle.

Professional competences (FC):

1. FC 1 Ability to collect medical information about the patient and analyze clinical data.
2. FC 2 Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
3. FC 3 The ability to establish a preliminary and clinical diagnosis of the disease.
4. FC 4 The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
5. FC 5 The ability to determine the nature of nutrition in the treatment and prevention of diseases.
6. FC 6 Ability to determine the principles and nature of treatment and prevention of diseases.
7. FC 7 Ability to diagnose emergency conditions.
8. FC 8 Ability to determine tactics and provide emergency medical care.
9. FC 9 Ability to carry out medical evacuation measures.
10. FC 10 Ability to perform medical manipulations.
11. FC 11 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.
12. FC 16 Ability to maintain medical documentation, including electronic forms.
13. FC 21 Clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to students.
14. FC 24 Compliance with ethical principles when working with patients and laboratory animals.

15. FC 25 Observance of professional and academic integrity, bear responsibility for the reliability of the obtained scientific results

Program learning outcomes (PLO):

1. 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.
2. PLO 2 Understanding and knowledge of fundamental and clinical biomedical sciences at a level sufficient for solving professional tasks in the field of health care.
3. PLO 3 Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and interdisciplinary problems related to it.
4. PLO 4 Highlight and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using data from the patient's history, examination of the patient, knowledge about the person, his organs and systems, establish a preliminary diagnosis of the disease (according to list 2).
5. PLO 5 Collect complaints, anamnesis of life and diseases, evaluate the psychomotor 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 regarding the diagnosis (according to list 4), taking into account the age and gender of the patient.
6. PLO 6 Establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical and additional examinations, carry out differential diagnosis; comply with relevant ethical and legal norms; to work under the supervision of a managing physician in the conditions of a health care facility (according to list 2).
7. PLO 7 Prescribe and analyze additional (mandatory and additional) examination methods (laboratory, functional and/or instrumental) (according to list 4) for patients with diseases of organs and body systems for differential diagnosis (according to list 2).
8. PLO 8 Determine the leading clinical syndrome or establish what determines the severity of the condition of the victim/victim (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care facility and outside of it, including h. in conditions of an emergency and hostilities, in field conditions, in conditions of lack of information and limited time).
9. PLO 9 Determine the nature and principles of treatment (conservative, operative) of patients with diseases according to list 2, taking into account the age and gender of the patient, in the conditions of a health care institution and outside of it, including at the stages of medical evacuation and in field conditions, on the basis of a previously established clinical diagnosis, observing relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes; in case of need to expand the standard scheme, be able to substantiate personalized recommendations under the control of the head physician in the conditions of a medical institution.
10. PLO 10 Determine the necessary regime of work, rest and nutrition of the patient based on the preliminary and/or final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to the existing algorithms and standards.
11. PLO 14 Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time in accordance with existing clinical protocols and standards.
12. PLO 16 Form rational medical routes for patients; organize interaction with colleagues in their own and other institutions, organizations and institutions; 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 a health care institution, its division and in a competitive environment.
13. PLO 17 To perform medical manipulations (according to list 5) in the conditions of a medical institution, at work and at the patient's home 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.
14. PLO 18 Determine the state of functioning and limitations of a person's vital activities and the duration of incapacity with the preparation of relevant documents in the conditions of a health care institution on the basis of data on the disease and its course, peculiarities of a person's professional activity, etc. To maintain medical documentation regarding the patient and a certain contingent of the population on the basis of regulatory documents.
15. PLO 19 Plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.
16. PLO 21 Find the necessary information in the professional literature and databases of other sources, analyze, evaluate and adequately apply this information.

17. PLO 22 Apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex problems of health care and research work.

18. PLO 25 Clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.

19. PLO 26 Manage work processes in the field of health care, which can be complex, unpredictable and require new strategic approaches; to organize the work and professional development of personnel taking into account the acquired skills of effective team work with adherence to leadership positions, appropriate quality, accessibility and fairness, ensuring the provision of integrated medical care.

20. PLO 27 Communicate freely in the national and English languages both orally and in writing to discuss professional activities, research and projects.

21. PLO 28 Make effective decisions on health care issues, assess the necessary resources, take into account social, economic and ethical consequences.

1.Matrix of competences

| № | Competence | Knowledge | Skills | Communication | Autonomy and responsibility |
|------------------------------|--|-----------|--------|---------------|-----------------------------|
| Integral competencies | | | | | |
| | The ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or in the process of learning, which involves conducting research and/or implementing innovations and is characterized by the complexity and uncertainty of conditions and requirements. | Kn 2 | Sk 2 | C2 | AR3 |
| General competences | | | | | |
| GC1. | Ability to abstract thinking, analysis and synthesis. | Kn1 | Sk1 | C1 | AR1 |
| GC2. | Ability to learn and master modern knowledge. | Kn 1 | Sk 3 | C2 | AR3 |
| GC3. | Ability to apply knowledge in practical situations. | Kn 1 | Sk 2 | C1 | AR1 |
| GC4. | Knowledge and understanding of the subject area and understanding of professional activity. | Kn 2 | Sk 2 | C2 | AR2 |
| GC5. | Ability to adapt and act in a new situation. | | Sk 3 | | AR2 |
| GC6. | Ability to make informed decisions. | Kn 1 | Sk 3 | C1 | AR1 |
| GC7. | Ability to work in a team. | Kn 2 | Sk 3 | C1 | AR2 |
| GC8. | Ability to interpersonal interaction. | Kn 1 | Sk 3 | C1 | AR2 |
| GC10. | Ability to use information and communication technologies. | Kn 2 | Sk 3 | C2 | AR3 |
| GC11. | Ability to search, process and analyze information from various sources. | Kn 2 | Sk 2 | C2 | AR2 |
| GC12. | Determination and persistence in relation to assigned tasks and assumed responsibilities. | Kn 2 | Sk 3 | | AR3 |
| GC13. | Awareness of equal opportunities and gender issues. | Kn 2 | Sk 1 | C1 | AR1 |
| GC14. | The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine. | Kn 1 | Sk 2 | C1 | AR3 |
| GC15. | The ability to preserve 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 | Kn2 | Sk 3 | | AR3 |

| | | | | | |
|---------------------------------|---|------|------|----|-----|
| | various types and forms of motor activity for active recreation and leading a healthy lifestyle. | | | | |
| Professional competences | | | | | |
| PC1. | Ability to collect medical information about the patient and analyze clinical data. | Kn 2 | Sk 3 | C2 | AR3 |
| PC2. | Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results. | Kn 2 | Sk 3 | | AR1 |
| PC3. | Ability to establish a preliminary and clinical diagnosis of the disease. | Kn 2 | Sk 3 | | AR2 |
| PC4. | The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases. | Kn 2 | Sk 2 | C1 | AR1 |
| PC5. | The ability to determine the nature of nutrition in the treatment and prevention of diseases. | Kn 2 | Sk 1 | C1 | AR1 |
| PC6. | Ability to determine the principles and nature of treatment and prevention of diseases. | Kn 2 | Sk 3 | C1 | AR1 |
| PC7. | Ability to diagnose emergency conditions. | Kn 2 | Sk 3 | C1 | AR2 |
| PC8. | Ability to determine tactics and provide emergency medical care. | Kn 2 | Sk 3 | C1 | AR2 |
| PC9. | Ability to carry out medical evacuation measures. | Kn 2 | Sk 2 | C1 | AR2 |
| PC10. | Ability to perform medical manipulations. | Kn 1 | Sk 3 | C1 | AR1 |
| PC11. | 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. | Kn 2 | Sk 3 | C1 | AR2 |
| PC16. | Ability to maintain medical documentation, including electronic forms. | Kn 2 | Sk 3 | C1 | AR1 |
| PC21. | It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying. | Kn 2 | Sk 3 | C2 | AR2 |
| PC24. | Adherence to ethical principles when working with patients and laboratory animals. | Kn 1 | Sk 2 | C1 | AR1 |
| PC25. | Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results. | Kn 2 | Sk 2 | C2 | AR3 |

| 2. Program learning outcomes | | |
|-------------------------------------|--|--------------------------------|
| Learning outcome code | Content of the learning outcome | Link to competency matrix code |
| Kn -1 | Know anatomy, physiology of internal organs and systems, skin, connective tissue, blood | PLO-1-3 |
| Kn -2 | Know the pathomorphology and pathophysiology of all major changes and lesions of internal organs, skin, connective tissue, blood | PLO -1-3 |
| Kn -3 | To know the biochemistry of the main metabolic processes, the mechanisms of action of the main pharmaceutical preparations | PLO -1-3 |
| Kn -4 | Know the characteristics of pathogens of diseases of internal organs, the basics of epidemiology | PLO -1-3 |
| Kn -5 | know the methods of determining health and environmental indicators; system of preventive measures; socio-economic and biological determinants of health, methods of evaluating the performance of a doctor, and the quality of medical care | PLO -15-19 |
| Sk -1 | Collect data on the patient's complaints, medical history, life history, | PLO -4-5 |

| | | |
|-------|--|------------|
| | conduct a physical examination | |
| Sk -2 | Evaluate the results of laboratory and instrumental research | PLO -5,7 |
| Sk -3 | Perform basic medical manipulations | PLO -13 |
| C-1 | Identify leading syndromes. Assign an examination. Carry out differential diagnosis. Establish preliminary and clinical diagnoses. | PLO -6-8 |
| C-2 | Determine the regime, nutrition, plan the strategy and tactics of prevention. | PLO -9-12 |
| C-3 | Determine the treatment, plan its duration. | PLO -9-12 |
| C-4 | Diagnose emergency conditions and determine the tactics of providing emergency medical care. | PLO -11 |
| C-5 | Determine health indicators; environmental factors; preventive measures; determinants of health, effectiveness of the doctor | PLO -15,19 |
| AR -1 | Organize the work of medical personnel; form rational medical routes for patients; interact with colleagues, organizations and institutions. | PLO -18-21 |
| AR-2 | Be guided by rights, freedoms, responsibilities, raise your level. To comply with the requirements of ethics, bioethics and deontology. | PLO -18-21 |
| AR-3 | Form the goals and structure of personal activity. Follow a healthy lifestyle and self-control. | PLO -18-21 |

3. Format and scope of the course

| Format of the course | Full-time | |
|-----------------------------------|-----------------|------------------|
| Type of training sessions | Number of hours | Number of groups |
| lectures (L) | 0 | 0 |
| practical classes (P) | 36 | 7 |
| seminars | 0 | 0 |
| individual work of students (IWS) | 54 | 7 |

4. The structure of the discipline

| Topic | Lectures | Practical classes | ISW |
|--|---------------|-------------------|-----------|
| Topic 1 Criteria for the diagnosis of acute coronary syndrome. Coronary syndrome X. Basic principles of acute coronary syndrome treatment | | 7 | 11 |
| Topic 2 Diagnostic criteria for the main rhythm disorders (tachycardia, bradycardia, atrial fibrillation, extrasystole; bundle branch blocks, atrio-ventricular and sinoatrial blocks) | | 7 | 11 |
| Topic 3 Systolic and diastolic dysfunction of the left ventricle. Basic principles of heart failure treatment | | 7 | 11 |
| Topic 4 Thrombolytic and antiplatelet drugs. Modern thrombolytic therapy in the treatment of acute coronary syndrome. | | 7 | 11 |
| Topic 5 Diagnostic criteria for disorders of lipid metabolism. Final lesson | | 8 | 10 |
| Total number of hours _90_ / _3_ credits ECTS | 0 | 36 | 54 |
| Final control | Credit | | |

5. Thematic plan of practical classes

| Class type code | Topic | H. |
|-----------------|--|----|
| P-1 | Criteria for the diagnosis of acute coronary syndrome. Coronary syndrome X. Basic principles of acute coronary syndrome treatment | 7 |
| P-2 | Diagnostic criteria for the main rhythm disorders (tachycardia, bradycardia, atrial fibrillation, extrasystole; bundle branch blocks, atrio-ventricular and sinoatrial blocks) | 7 |
| P-3 | Systolic and diastolic dysfunction of the left ventricle. Basic principles of heart failure treatment | 7 |
| P-4 | Thrombolytic and antiplatelet drugs. Modern thrombolytic therapy in the treatment of acute coronary syndrome. | 7 |
| P-5 | Diagnostic criteria for disorders of lipid metabolism. Final lesson | 8 |
| | Totally | 36 |

6. Thematic plan of individual works

| Class type code | Topic | H. |
|-----------------|---|----|
| IWS -1 | Antiplatelet drugs, indications and contraindications for appointment. | 11 |
| IWS -2 | Thromboembolic complications in cardiology: causes, diagnosis, principles of treatment | 11 |
| IWS -3 | Basic principles of emergency care for cardiogenic shock. Diagnostic criteria of Dressler's syndrome. | 11 |
| IWS -4 | Arrhythmogenic effect of antiarrhythmic drugs | 11 |
| IWS -5 | Factors that worsen the prognosis of heart failure | 10 |
| | Totally | 54 |

7. Individual tasks: Presentation of an essay to a practical lesson. Report at clinical conferences of department bases. Presentation of medical history at a practical session. Writing theses, articles. Mastering practical skills. Review of scientific literature by topic. Writing a workbook on the subject of the lesson

8. Teaching methods

Practical, visual, verbal, work with a book, video method. During classes, such methods of interactive learning as business games, role-playing games, cases, etc. are used.

The system of organizing classes consists of blocks: program-informational, educational-methodical, control, educational-research, auxiliary.

The program information block is presented on the official website of the university.

The teaching-methodical block includes theoretical lecture materials (Misa), which are read using multimedia presentations.

Methodical materials for students and teachers are updated every 5 years and are available not only in printed form, but also in electronic form (MISA), in which they are distributed to students. Software material and a human torso dummy with software are also used. Educational and practical materials also include educational DVD films on the physical examination of the patient and others (on invasive methods of research and treatment), atlases on clinical diagnostics, instrumental methods of examination.

The control unit contains materials for ongoing monitoring of students' activities (questions, test tasks (MISA), "Step 2" test databases).

The educational-research block contains the topics of creative tasks, essays, educational-research tasks, course qualification papers, etc. The department stores multimedia materials of student scientific-practical conferences, as examples and/or illustrative material; students have the opportunity to directly participate in sonography of abdominal organs.

The auxiliary unit is filled with video, audio, multimedia materials and electronic manuals, the materials of which can be processed on individual portable devices. To ensure students' independent work, links to electronic resources that can be used are offered.

Course policy. In the teaching and learning of the Internal Medicine all teachers and students adhere to the policy of academic integrity, intolerance to violations of medical and general human deontology and ethics. Examination of patients at the clinical bases of the department complies with the principles of the Helsinki Declaration of the World Medical Association regarding the ethical principles of conducting scientific medical research with human participation (1964, 2004, 2013) and Orders of the Ministry of Health of Ukraine No. 690 (2009), No. 944 (2009) and No. 616 (2012).

Control methods:

Oral, written, test, programmed, practical control, self-control.

Types of control: current and final.

Form of final control of study success: credit

8. Current control.

It is carried out during training sessions and is aimed at checking the students' assimilation of the educational material. It is carried out on the basis of a test assessment of the initial level of knowledge, a check of home written self-preparation for the class, practical work in the class according to the topic, plan and program (examination of the patient, writing of the examination protocol, solving situational problems, level 2 tests). Forms of assessment of current educational activities are standardized and include control of theoretical and practical training. During the evaluation of the mastery of each topic for the current educational activity, the student is given grades on a 4-point (traditional) scale. At the same time, all types of work provided by the educational program are taken into account. The student must receive a grade in each topic.

| Learning outcome code | Class type code | Assessment criteria |
|-----------------------|--------------------|--|
| example: Kn-1-15, | L-1-13, P-1-16, | « Excellent » (« 5 »): 90-100% answers for format A tests are correct; correct clear, complete and logical answers for the questions about the current topic, including questions and tasks for individual work. Presence of qualitative and complete home task. A student closely links theory to practice and correctly demonstrates practical skills; able to solve clinical cases of increased complexity and to summarize the |

| | | |
|--------------------------|----------|--|
| Sc-1-15, C-1-15, AR-1-15 | IWS-1-16 | <p>material. A student correctly conducts physical examination of thematic patient, has the necessary communication skills, and uses the principles of medical deontology.</p> <p>«Good» («4»): 70-89% answers for format A tests are correct; clear and right answers for the questions about the current topic, including questions and tasks for individual work. There is a qualitative home task. A student correctly demonstrates practical skills or makes non-significant mistakes; able to solve typical clinical cases and cases of moderate complexity. A student correctly conducts physical examination of thematic patient, has the necessary practical skills, and makes no fatal mistakes during diagnosis and treatment. A student may communicate with patients and colleagues, using the principles of medical deontology.</p> <p>"Satisfactory" ("3"): 60-69% answers for format A tests are correct. Homework is incomplete or contains mistakes. Inadequate or incomplete answers for the questions about the current topic and individual work. A student cannot build a clear, logical answer; makes significant mistakes when answering and demonstrating practical skills; solves only easy typical clinical cases, has a minimum of necessary practical skills; performs examination and plan treatments with errors that do not threaten the patient's life; has a minimum of communication skills, uses the principles of medical deontology.</p> <p>"Unsatisfactory" ("2"): <60% answers for format A tests are correct. The home task is written very bad or is absent. A student does not know the material of the current topic, cannot answer independently and logically to additional questions, does not understand the content of the material; makes significant mistakes when answering and demonstrating practical skills; conducts examination and plan treatment with fatal consequences for a patient; has insufficient communication or verbal skills; insufficiently uses the principles of medical deontology.</p> |
|--------------------------|----------|--|

11. Final control

| | | |
|--|---|---|
| General rating system | Participation in work during the semester is 100% on a 200-point scale | |
| Rating scales | Traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale | |
| Conditions of admission to the final control | The student attended all practical classes and received at least 120 points for the current performance, a maximum of 200 points | |
| Type of final control | Methodology of final control | Passing criteria |
| Test | All topics passed and estimated positively. Rating is converted from a 4-point scale to a 200-point scale in accordance with the "Criteria, rules and procedures for evaluating the results of student's learning activities" | Maximum rating - 200. Minimal rating - 120 points |

12. Calculation and distribution of points received by students

Assessment is one of the final stages of educational activity and determination of educational success. Evaluation is based on the amount for Practice in Simulation Medicine in Internal Medicine, Surgery, Obstetrics and Gynecology, Pediatrics.

The calculation of the number of points is carried out on the basis of the grades received by the student on a traditional scale during the study of the discipline by calculating the arithmetic average (CA), which is converted into points on a multi-point scale as follows:

$$x = CA \times 200 / 5$$

For convenience, a calculation table is given on a 200-point scale:

Recalculation of the average grade for the current activity into a multi-point scale for disciplines ending with a credit

| 4-point scale | 200-point scale | 4-point scale | 200-point scale | 4-point scale | 200-point scale | 4-point scale | 200-point scale |
|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|
| 5 | 200 | 4.45 | 178 | 3.92 | 157 | 3.37 | 135 |
| 4.97 | 199 | 4.42 | 177 | 3.89 | 156 | 3.35 | 134 |
| 4.95 | 198 | 4.4 | 176 | 3.87 | 155 | 3.32 | 133 |
| 4.92 | 197 | 4.37 | 175 | 3.84 | 154 | 3.3 | 132 |
| 4.9 | 196 | 4.35 | 174 | 3.82 | 153 | 3.27 | 131 |
| 4.87 | 195 | 4.32 | 173 | 3.79 | 152 | 3.25 | 130 |
| 4.85 | 194 | 4.3 | 172 | 3.77 | 151 | 3.22 | 129 |
| 4.82 | 193 | 4.27 | 171 | 3.74 | 150 | 3.2 | 128 |
| 4.8 | 192 | 4.24 | 170 | 3.72 | 149 | 3.17 | 127 |
| 4.77 | 191 | 4.22 | 169 | 3.7 | 148 | 3.15 | 126 |
| 4.75 | 190 | 4.19 | 168 | 3.67 | 147 | 3.12 | 125 |
| 4.72 | 189 | 4.17 | 167 | 3.65 | 146 | 3.1 | 124 |

| | | | | | | | |
|------|-----|------|-----|------|-----|--------|------------|
| 4.7 | 188 | 4.14 | 166 | 3.62 | 145 | 3.07 | 123 |
| 4.67 | 187 | 4.12 | 165 | 3.57 | 143 | 3.02 | 121 |
| 4.65 | 186 | 4.09 | 164 | 3.55 | 142 | 3 | 120 |
| 4.62 | 185 | 4.07 | 163 | 3.52 | 141 | Less 3 | Not enough |
| 4.6 | 184 | 4.04 | 162 | 3.5 | 140 | | |
| 4.57 | 183 | 4.02 | 161 | 3.47 | 139 | | |
| 4.52 | 181 | 3.99 | 160 | 3.45 | 138 | | |
| 4.5 | 180 | 3.97 | 159 | 3.42 | 137 | | |
| 4.47 | 179 | 3.94 | 158 | 3.4 | 136 | | |

Points from the discipline are independently converted to both the ECTS scale and the 4-point scale. The points of the ECTS scale are not converted into a 4-point scale and vice versa.

Points of students studying in one specialty, taking into account the number of points scored in the discipline, are ranked according to the ECTS scale as follows:

| Point ECTS | Statistical indicator |
|------------|--------------------------|
| A | The best 10% of students |
| B | The next 25% of students |
| C | The next 30% of students |
| D | The next 25% of students |
| E | The last 10% of students |

Discipline points for students who have successfully completed the program are converted to a traditional 4-point scale according to the absolute criteria shown in the table below:

| Discipline points | Evaluation on a 4-point scale |
|---|-------------------------------|
| From 170 to 200 points | 5 |
| From 140 to 169 балів | 4 |
| From 139 points to the minimum number of points that the student must score | 3 |
| Below the minimum number of points that the student must score | 2 |

The ECTS score is not converted to a traditional scale, since the ECTS scale and the four-point scale are independent.

The objectivity of the assessment of the students' educational activity is checked by statistical methods (correlation coefficient between the ECTS assessment and the assessment on the national scale).

13. Methodical support

1. Working curriculum of the discipline, syllabus.
2. Plans of practical classes and independent work of students.
3. Methodological developments for teachers and students, including for independent work.
4. Test and control tasks for practical classes, situational tasks, descriptions of clinical cases.
5. Dummies, mannequin, available at the department.
6. Multimedia equipment and course presentations.
7. Scientific and educational publications of the department's staff on evidence-based medicine.

14. Recommended literature

Basic:

1. eMPendium – electronic compendium "Internal diseases" in open access [Electronic resource]. Access mode: <https://empendium.com/mcmtxtbook/>.
2. Davidson's Principles and Practice of Medicine 23rd Edition. Editors: Stuart Ralston, Ian Penman, Mark Strachan Richard Hobson. Elsevier. - 2018. - 1440 p.
3. USMLE Step 2 CK Lecture Notes 2017: Internal Medicine (Kaplan Test Prep). - 2016. - Published by Kaplan Medical. - 474 p.
4. Kasper, Dennis L., Anthony S. Fauci, Stephen L. Hauser, Dan L. Longo, J. Larry Jameson, and Joseph Loscalzo. Harrison's Principles of Internal Medicine. 19th edition. New York: McGraw Hill Education, 2015.

Additional:

5. Korolyuk O, Radchenko O. Hypertriglyceridemia is associated with long-term risk of cardiovascular events and specific comorbidity in very high-risk hypertensive patients // Ukr.Biochem.J. – 2020. – Vol. 92(2). – P. 8-19. <https://doi.org/10.15407/ubj92/02.008>
6. Korolyuk O. Ya. The results of 5-year atorvastatin therapy at the doses of 20-40 mg daily in metabolically compromised patients at very high risk // <https://esc365.escardio.org/Congress/ESC-CONGRESS-2020-The-Digital-Experience/Pharmacology-and-Pharmacotherapy-ePosters/218520-the-results-of-5-year-atorvastatin-therapy-at-the-doses-of-20-40-mg-daily-in-metabolically-compromised-patients-at-very-high-risk#abstract>
7. McDonagh T, Metra M, Adamo M et al, ESC Scientific Document Group, 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC. // Eur Heart J. – 2021. – Vol. 42 (36). – P. 3599–3726, <https://doi.org/10.1093/eurheartj/ehab368>

8. Hindricks G, Potpara T, Dagres N, et al., ESC Scientific Document Group, 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS): The Task Force for the diagnosis and management of atrial fibrillation of the European Society of Cardiology (ESC) Developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC. // *Eur Heart J.* – 2021. – Vol. 42 (5). – P 373–498, <https://doi.org/10.1093/eurheartj/ehaa612>
9. Konstantinides SV, Meyer G, Becattini C, et al., ESC Scientific Document Group. 2019 ESC Guidelines for the diagnosis and management of acute pulmonary embolism developed in collaboration with the European Respiratory Society (ERS): The Task Force for the diagnosis and management of acute pulmonary embolism of the European Society of Cardiology (ESC). // *Eur Heart J.* – 2020. – Vol. 41 (4). – P. 543–603, <https://doi.org/10.1093/eurheartj/ehz405>
10. Collet J-P, Thiele H, Barbato E, et al., ESC Scientific Document Group, 2020 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation: The Task Force for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation of the European Society of Cardiology (ESC) // *Eur Heart J.* – 2021. – Vol. 42 (14) – P. 1289–1367, <https://doi.org/10.1093/eurheartj/ehaa575>
11. Brugada J, Katriotis DG, Arbelo E et al., ESC Scientific Document Group. 2019 ESC Guidelines for the management of patients with supraventricular tachycardia. The Task Force for the management of patients with supraventricular tachycardia of the European Society of Cardiology (ESC): Developed in collaboration with the Association for European Paediatric and Congenital Cardiology (AEPC). // *Eur Heart J.* – 2020. – Vol. 41(5). – P. 655–720, <https://doi.org/10.1093/eurheartj/ehz467>
12. Knuuti J, Wijns W, Saraste A et al., ESC Scientific Document Group. 2019 ESC Guidelines for the diagnosis and management of chronic coronary syndromes: The Task Force for the diagnosis and management of chronic coronary syndromes of the European Society of Cardiology (ESC) // *Eur Heart J.* – 2020. – Vol. 41(3). – P. 407–477, <https://doi.org/10.1093/eurheartj/ehz425>

15. Information resource

Website: <https://new.meduniv.lviv.ua/kafedry/kafedra-vnutrishnoyi-medytsyny-2/>

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