

MINISTRY OF HEALTH OF UKRAINE
Kharkiv National Medical University
Department of Internal Medicine № 1

Branch of knowledge – 22 «Health Care»
Speciality – 222 «Medicine»
Specialization – «Master of medicine»

Educational-professional program Medicine of the second (master's) level of higher education
academic year 2021 - 2022

SYLLABUS OF THE COURSE

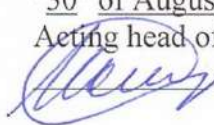
"FUNDAMENTALS OF CARDIOLOGY"

for 4 th year students

The syllabus was approved at the methodical meeting of the Department of Internal Medicine №1

Protocol № 14 from
"30" of August 2021

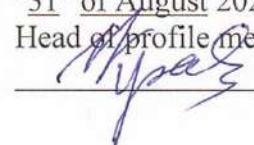
Acting head of Department

 professor Zhelezniakova N. M.

The syllabus was approved at the meeting of the methodical commission of KhNMU on the problems of therapeutic disciplines

Protocol № 1 from
"31" of August 2021

Head of profile methodical commission

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Information about consultations. Eye consultations: schedule and venue according to the schedule of the department. Online consultations: by prior arrangement with the teacher.

Location: auditorium and classrooms of the Department of Internal Medicine №1 on the basis of the Government Institution -L.T.Malaya Therapy National Institute of the National Academy of Medical Sciences of Ukraine (2a L. Malaya Ave.).

Class time: Monday, Tuesday, Wednesday, Thursday, Friday (8⁰⁰-12¹⁵/8⁰⁰-13¹⁰ according to the schedule).

Course information**1. Description of the course**

Year: 4

Specific semester / academic year: VII-VIII

The volume of the discipline: ECTS credits - 3, a total of 90 hours, of which practical classes - 20 hours, VTS - 70 hours.

Type of control – credit

General characteristics of the course. The elective course "**Fundamentals of cardiology**" for 6th year students provides students studying the basic issues of Cardiology with an emphasis on skills of history taking, physical examination, differential diagnosis, basic treatment and

prevention of gastrointestinal diseases in the therapeutic clinic.

The role and place of course in the system of training

Cardiology is one of the basic disciplines in the training of physicians of any profile who study the patterns and features of pathogenesis, clinical course of cardiovascular system diseases using an interdisciplinary approach to their treatment, as well as rehabilitation processes after severe pathological conditions, their main preventive ways and methods.

1. THE PURPOSE AND TASKS OF THE COURSE

The syllabus of the study of the discipline " Fundamentals of cardiology " is compiled in accordance with the Educational and Professional Program "Medicine" and the draft Standard of Higher Education of Ukraine (hereinafter - the Standard), second (master's) level, field of knowledge 22 "Health", specialty 222 "Medicine" ‖

1.1. The purpose of studying the discipline is to deepening theoretical knowledge and mastering practical skills that provide improving the professional competence of doctors in clinical electrocardiography for emergency conditions.

1.2. The main tasks of studying the discipline are:

1. training of student with formation of professional problems decision skills according to kinds of professional activity (preventive, diagnostic, medical, rehabilitation);
2. formation of students' communication skills with the patient, conducting a full range of diagnostic and therapeutic measures in accordance with clinical protocols for the management of patients in the hospital and outpatient stages;
3. development of students' skills of interviewing and clinical examination of patients, interpretation of the results of routine and special laboratory and instrumental methods of organs and systems diagnostics;
4. formation in students of skills of statement, substantiation and formulation of the diagnosis, planning of patient's examination, determination of their management tactics;
5. formation of students' skills to carry out prevention, treatment and rehabilitation of the patient, to appoint and directly carry out treatment of patients in hospitals and outpatient stages;
6. formation of skills of medical history and ambulatory card registration with the statement of all their basic sections, substantiation of the clinical diagnosis, the examination and treatment plans, definition of working capacity and indications for hospitalization, keeping diaries and registration of stage epicrisis while working with cardiological patients.

2. INFORMATION SCOPE OF THE COURSE

2.1 Description of the discipline

Discipline status - normative, discipline format - mixed (combination of traditional forms of classroom learning with elements of e-learning on the platform Moodle, ZOOM, Google Meet.)

Name of indicators	Field of knowledge, direction of training, educational and qualification level	Characteristics of the discipline full-time education
Number of credits 3	branch of knowledge 22 Healthcare	Elective
The total number of hours is 90	222 "Medicine"	Year - 4th
		Semester: VII-VIII
Hours for full-time study: classes - 20 independent work of the student - 70	The second (master's) level	Practical 20
		Independent work - 70
		Type of control: credit

PRACTICAL CLASSES

№	Topic	Number of hours	Teaching methods	Forms of control
1.	Myocardial electrophysiology, anatomical and functional characteristics of the cardiac conduction system: formation and conduction of an impulse	5	Story-explanation, conversation, illustration, demonstration, presentation, videos, discussion, round table, business, role-playing, simulation game, simulation of processes and situations, delegation of authority, case method	oral examination (individual and frontal); written survey; test control; creative tasks; individual tasks;

2.	Pathological ECG changes: ECG - signs of cardiac hypertrophy ECG in coronary heart disease	5	Story-explanation, conversation, illustration, demonstration, presentation, videos, discussion, round table, business, role-playing, simulation game, simulation of processes and situations, delegation of authority, case method	oral examination (individual and frontal); written survey; test control; creative tasks; individual tasks;
3.	ECG diagnostics for emergency conditions	5	story-explanation, conversation, illustration, demonstration, presentation, videos, discussion, round table, business, role-playing, simulation game, simulation of processes and situations, delegation of authority, case method	oral examination (individual and frontal); written survey; test control; creative tasks; individual tasks;
4.	Final control	5		test control; individual tasks, credit ;
	TOTAL	20		

SELF-WORK

№	Topic	Number of hours	Teaching methods	Forms of control
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1	Preparation for practical training # 1 Clinical electrocardiography. Myocardial electrophysiology. Principles and components of vector ECG analysis. Standard and chest ECG leads. Additional ECG leads. Characteristics of a normal ECG	17,5	story-explanation, conversation, illustration, demonstration, presentation, videos, discussion, round table, business, role-playing, simulation game, simulation of processes and situations, delegation of authority, case method	oral examination (individual and frontal); written survey; test control; creative tasks; individual tasks;
2	Preparation for practical training #2 Causes of left heart hypertrophy. Causes of hypertrophy of the right heart. Causes of combined atrial hypertrophy. Diagnostic criteria for combined atrial hypertrophy. Features of coronary circulation in coronary artery disease.	17,5	story-explanation, conversation, illustration, demonstration, presentation, videos, discussion, round table, business, role-playing, simulation game, simulation of processes and situations, delegation of authority, case method	oral examination (individual and frontal); written survey; test control; creative tasks; individual tasks;
3	Preparation for practical training #3 ECG in recurrent acute infarction myocardium. ECG in myocardial infarction on background of preexcitation syndrome ventricles. ECG at a ventricular tachycardia. ECG with tremor ventricles, differential diagnosis. ECG for ventricular fibrillation, prognosis.	17,5	story-explanation, conversation, illustration, demonstration, presentation, videos, discussion, round table, business, role-playing, simulation game, simulation of processes and situations, delegation of authority, case method	oral examination (individual and frontal); written survey; test control; creative tasks; individual tasks;
4.	Preparation for credit	17,5		credit
	Total	70		

Teaching methods:

Story-explanation, conversation, illustration, demonstration, presentation, videos, discussion, round table, business, role-playing, simulation game, simulation of processes and situations, delegation of authority, case method;

Control methods:

Current control: oral examination (individual and frontal); written survey; test control;

report. Current educational activities are carried out and controlled by the teacher of the academic group, after students master each topic of the discipline; it is graded using a 4-point (traditional) system: "excellent", "good", "satisfactory" and "unsatisfactory".

Final control: credit. The final lesson is held after the logically completed part of the discipline, consisting of a set of educational elements of the curriculum, which combines all types of training (theoretical, practical, etc.) elements of educational and professional program (academic discipline, all types of practices, certification), which is implemented by appropriate forms of educational process.

The final lesson is held in accordance with the curriculum during the semester on schedule, during classes. Admission of the final lesson is carried out by the teacher of the academic group or the exchange of related groups between teachers. Forms of the final lesson are standardized and include control of all types of training (theoretical, practical, independent, etc.) provided by the curriculum of the discipline.

3. EVALUATION POLICY

3.1. Evaluation of the success of education of students is carried out on the basis of the current "Instructions for assessing the educational activities of applicants for higher education in KhNMU", Order №182 from 21.08. 2021

Discipline requirements - compliance with the requirements established by the current legislation of Ukraine, the rules of KhNMU, general ethics.

Attendance and behavior - the inadmissibility of omissions, delays, compliance with the rules of deontology.

Academic Integrity Policy is a strict adherence to academic integrity.

Policy for people with special educational needs - an individual approach to students within the requirements of the curriculum.

Recommendations for successful completion of the discipline - compliance with the requirements of the curriculum, obtaining a sufficient number of points.

Encouragement and recovery - upon receipt of additional knowledge in family medicine, students can take part in the work of the SNT department.

Safety - the need to follow safety rules.

Procedure for informing about changes in the syllabus - informing about changes in the syllabus is carried out through the official website of KhNMU.

3.2. Questions for credit and exam:

1. Management of patients with acute coronary syndrome: algorithms and standards of diagnosis and treatment.
2. Management of patients with STEMI: algorithms and standards of diagnosis and treatment.
3. Management of patients with Non-STEMI: algorithms and standards of diagnosis and treatment.
4. Management of patients with disturbances of heart rhythm: algorithms and standards of diagnosis and treatment.
5. Management of patients with cardiac conduction disturbances: algorithms and standards of diagnosis and treatment.
6. Management of patients with supraventricular arrhythmias: algorithms and standards of diagnosis and treatment.
7. Management of patients with ventricular arrhythmias: algorithms and standards of diagnosis.
8. Management of patients with paroxysmal arrhythmias: algorithms and standards of diagnosis and treatment.
9. Management of patients with cardiomegaly: standards of diagnosis and emergency treatment at the pre-hospital and hospital stages.

10. Management of patients with heart murmurs: algorithms and standards of diagnosis and treatment.
11. Management of patients with cardiomyopathy: algorithms and standards of diagnosis and treatment.

3.3. Control questions and tasks for self work

1. Options of a normal ECG depending on human constitution;
2. ECG diagnosis of hypertrophy and / or overload of the right ventricle;
3. ECG for angina pectoris. Classification of ventricular tachycardias;
4. ECG for chronic coronary artery disease, functional samples;
5. ECG in WPW syndrome. Ventricular pre-excitation syndromes hearts;
6. ECG during functioning an additional way of conducting - p. Kent.;
7. ECG during the functioning of the RPPS - p. James. ECG during functioning DPS - p. Maheim;
8. Classification of paroxysmal and chronic tachycardia;
9. Supraventricular block, ECG diagnostics;
10. Atrioventricular blockade, classification. Elongated syndrome QT interval.

3.4. Individual tasks

6. RECOMMENDED INFORMATION RESOURCES

Basic

1. Babak O.Ya., Bilovol O.M., Zhelezniakova N.M. et al.; Internal Medicine: Critical Care: textbook (III—IV a. l.) / edited by O.Ya. Babak, O.M. Bilovol. 2018. 386 p. ISBN:978-617-505-636-3;
2. Electrocardiogram in Clinical Medicine. William J. Brady, Michael J. Lipinski, Andrew E. Darby, Michael C. Bond, Nathan P. Charlton, Korin B. Hudson, Kelly Williamson. ISBN: 978-1-118-75455-9 December 2020 Wiley-Blackwell 512 Pages;
3. ECG in Emergency Medicine and Acute Care - 1st Edition. Theodore ChanWilliam Brady Richard Harrigan Joseph Ornato Peter Rosen. ISBN: 9780323018111/ Imprint: Mosby Published Date: 29th September 2004. Page Count: 416
4. Kasper, Dennis L., Anthony S. Fauci, Stephen L. Hauser, Dan L. 1949- Longo, J. Larry Jameson, and Joseph Loscalzo. Harrison's Principles of Internal Medicine. 19th edition. New York: McGraw Hill Education, 2015.
5. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: The Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC). Developed with the special contribution of the Heart Failure Association (HFA) of the ESC. Eur J Heart Fail. 2016 Aug;18(8):891-975;
6. 2017 ACC/AHA/HFSA Focused Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America. Circulation. 2017 Aug 8;136(6):e137-e16;
7. 2018 ACC/AHA/HRS Guideline on the Evaluation and Management of Patients With Bradycardia and Cardiac Conduction Delay: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Circulation. 2019 Aug 20;140(8):e382-e482;
8. A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. J Am Coll Cardiol. 2018 Oct 2;72(14):1677-1749;
9. 2017 AHA/ACC Focused Update of the 2014 AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease: A Report of the American College of

Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*. 2017 Jun 20;135(25):e1159-e1195;

10. 2019 AHA/ACC/HRS focused update of the 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *Heart Rhythm*. 2019 Aug;16(8):e66-e93;

Additional

1. 2017 AHA/ACC/HRS Guideline for Management of Patients With Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol*. 2018 Oct 2;72(14):1677-1749;

2. The 2020 Canadian Cardiovascular Society/Canadian Heart Rhythm Society Comprehensive Guidelines for the Management of Atrial Fibrillation. *Can J Cardiol*. 2020 Dec;36(12):1847-1948;

3. The electrocardiogram in the diagnosis and management of patients with hypertrophic cardiomyopathy. *Heart Rhythm*. 2020 Jan;17(1):142-151;

4. Diagnostic and prognostic role of electrocardiogram in acute myocarditis: A comprehensive review. *Ann Noninvasive Electrocardiol*. 2020 May;25(3):e12726

5. Sidhu S, Marine JE. Evaluating and managing bradycardia. *Trends Cardiovasc Med*. 2020 Jul;30(5):265-272;

6. Gach O, El HZ, Lancellotti P. Syndrome coronarien aigu [Acute coronary syndrome]. *Rev Med Liege*. 2018 May;73(5-6):243-250. French. PMID: 29926562;

7. Gourraud JB, Barc J, Thollet A, Le Marec H, Probst V. Brugada syndrome: Diagnosis, risk stratification and management. *Arch Cardiovasc Dis*. 2017 Mar;110(3):188-195;

8. McNamara N, Ibrahim A, Satti Z, Ibrahim M, Kiernan TJ. Acute pericarditis: a review of current diagnostic and management guidelines. *Future Cardiol*. 2019 Mar;15(2):119-126;

9. Global vascular guidelines on the management of chronic limb-threatening ischemia. *J Vasc Surg*. 2019 Jun;69(6S):3S-125S.e40;

10. KhNMU Repository (<http://repo.knmu.edu.ua/>) and KhNMU Library (<http://libr.knmu.edu.ua/>).

INCLUSIVE EDUCATION:

Kharkiv National Medical University has created favorable conditions for people with special educational needs:

- entrance to the premises is equipped with stationary ramps;
- elevators available;
- entrance doors to the premises provide access for people with severe musculoskeletal disorders and wheelchair access;
- necessary places of movement are equipped with hand-rails;
- there is a medical point to provide medical care;
- repair of classrooms and toilets was performed;
- the main premises of the university have natural light;
- the university adheres to the air - heat regime;
- clean air at the university is ensured by regular wet cleaning, the use of ventilation;
- The university yard has free access for low mobility groups.

Academic integrity

The Student Council carries out educational activities that help to form the following skills of academic integrity in students:

- act in professional and educational situations from the standpoint of academic integrity and professional ethics;
- independently perform educational tasks;
- correctly refer to sources of information in case of borrowing ideas, statements, information;
- be aware of the importance of the norms of academic integrity, evaluate examples of human behavior in accordance with these;
- evaluate examples of human behavior in accordance with the norms of academic integrity;
- to give a moral assessment of one's own actions, to correlate them with moral and professional norms.

To disseminate, achieve and improve these skills in students, the organization relies on the following principles and tools:

- explain the requirements related to the written assignment, as well as the nature, features and reasons for the inadmissibility of academic plagiarism as early as possible, at the beginning of each discipline;
- explain to students the value of acquiring new knowledge, academic standards that must be followed, why they are important, what is academic integrity, what are its values, what it serves, how students can contribute to its development by their actions;
- provide students with clear information about the rules of academic writing;
- prescribe a policy on academic plagiarism in the course program;
- formulate tasks in such a way that they cannot be plagiarized (analytical rather than reproducible formulation of the task; high specificity of the task; processing of specific sources and data);
- make sure that the requirements for the task and the criteria for its evaluation have been properly explained. Requirements for written works (volume, style of citation, allowable number of citations, design rules, etc.) should be clearly spelled out in the methodological materials for students;
- develop non-standard, creative tasks, update them annually;
- give students examples of finished work;

Full compliance with these points will help educate students in the basic rules of academic integrity.

INFORMATION RESOURCES

<http://distance.knmu.edu.ua/course/view.php?id=227>

**Acting head of Department,
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