

National Pirogov Memorial Medical University, Vinnytsya

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"APPROVE"

Vice – Rector of higher education institution
Research, Education and Academic Affairs

professor of HEI Oksana
SEREBRENNIKOVA

" 31 " 08 2022 year

"AGREED"

Head of Department
of internal medicine №2

professor of HEI Serhii SHEVCHUK

" 30 " 08 2022 year

SYLLABUS

academic discipline

Clinical electrocardiography

(optional course)

Specialty	222 Medicine
Educational level	Master's degree
Educational program	OPP "Medicine", 2020
Academic year	2022-2023
Chair	Internal Medicine No. 2
Lecturer (if lectures are given)	Professor of HEI Nadia MASIK
Contact Information	Department of Internal Medicine No. 2 Address: 21028, m. Vinnytsia, 104, Khmelnytskyi highway intmed2@vnmu.edu.ua
Compiler of the syllabus	Professor of HEI Nadia MASIK

2022 year

1. Status and structure of the discipline

Discipline status	Selective
Discipline code in OPP/ place of discipline in OPP	VC 5.3, professional training
Course/semester	5/ Kh
The scope of the educational discipline (total number of hours/ number of credits	60 hours/ 2 credits ECTS
Number of content modules	1 module
The structure of the discipline	Lectures - 20 hours. Practical classes - 10 hours. Independent work - 30 hours.
Language of teaching	Ukrainian, English
Form of education	Face-to-face (or remote according to the order)

2. Description of the academic discipline

Short abstract of the course, relevance.

subject study of the academic discipline is interpretation of ECG changes, which is of key importance for decision-making for the diagnosis and treatment of heart rhythm and conduction disorders, myocardial infarction and other heart diseases.

Acquaintance with the specified discipline gives the student of higher education the degree of Doctor of Philosophy the opportunity to acquire competencies (knowledge and skills) in accordance with the requirements of the educational and qualification characteristics of the future specialist, to analyze information about rhythm and conduction disorders that can be diagnosed with the help of an ECG, to understand the main approaches to the treatment of such patients The student will acquire knowledge of the basics of electrocardiography, diagnosis of heart rhythm and conduction disorders, hypertrophy of heart chambers, myocardial infarction and other heart diseases.

Prerequisites

To successfully master this discipline, a student needs knowledge of the main basic disciplines at the III level of higher education, as well as the following disciplines: physiology, pathophysiology, medical and biological physics, bioorganic and biological chemistry, as a methodological basis for the development of science; English in scientific and medical communication; Medical ethics and deontology, Culture of the doctor's language: terminological aspect. In turn, "Clinical electrocardiography", as an educational discipline, is focused on acquiring knowledge of cardiology and is based on the students' study of practical approaches to ECG analysis and the formulation of a conclusion in the norm and in the most common pathological conditions; and integrates with therapeutic disciplines; lays the foundations of theoretical knowledge and practical skills: in pharmacology; from propaedeutic therapy; on the diagnosis and treatment of diseases of a therapeutic profile; on emergency diagnosis of arrhythmias, heart block and myocardial infarction. The discipline "Clinical electrocardiography" forms the basis of in-depth study of specialized disciplines: Internal Medicine, Cardiology, Rheumatology, Pulmonology, Pediatrics, Family Medicine, Physiology, Pathological Physiology.

The purpose of the course and its importance for professional activity.

The purpose of teaching the academic discipline "Clinical electrocardiography" is the training of a doctor by specialty and according to the basics of the content of the educational

discipline. The goal provides for the acquisition and deepening of a set of knowledge, abilities, skills and other competencies sufficient for solving complex tasks in this discipline, as well as improving knowledge about the peculiarities of the structure and functioning of the conducting system of the heart, the study of electrocardiographic changes in certain diseases of the heart and blood vessels, and the possibility their practical interpretation and differential diagnostic signs.

According to the requirements of the OPP, the discipline ensures that students of higher education acquire the following competencies and program learning outcomes:

Integral (IC):

IC. The ability to solve complex problems, including those of a research and innovation nature in the field of medicine. Ability to continue learning with a high degree of autonomy.

General (GC):

- GC 1. Ability to abstract thinking, analysis and synthesis.
- GC 2. The ability to learn and master modern knowledge.
- GC 3. Ability to apply knowledge in practical situations.
- GC 4. Knowledge and understanding of the subject field and understanding of professional activity.
- GC 5. Ability to adapt and act in a new situation.
- GC 6. Ability to make informed 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 in relation to assigned tasks and assumed responsibilities.
- GC 13. Awareness of equal opportunities and gender issues.
- GC 14. The ability to realize one's rights and responsibilities as a member of society, to realize the values of 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.
- 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, techniques and technologies, use different types and forms motor activity for active recreation and leading a healthy lifestyle.

Special (professional, subject) (SC):

- SC 1. Ability to collect medical information about the patient and analyze clinical data.
- SC 2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
- SC 3. Ability to establish a preliminary and clinical diagnosis of the disease.
- SC 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.
- SC 16. Ability to maintain medical documentation, including electronic forms.
- SC 21. 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.
- SC 24. Compliance with ethical principles when working with patients and laboratory animals.
- SC 25. Observance of professional and academic integrity, bear responsibility for the reliability of the obtained scientific results.

Post-requisites

As a result of studying the discipline, students should:

Know:

- the structure of the conducting system of the heart, the electrophysiological basis of the electrocardiographic research method;
- the principle of ECG registration and formation of electrocardiographic leads;
- the main elements of a normal ECG, indications for the use of functional diagnostic methods in cardiology;
- the basics of ECG analysis (estimation of voltage, sources of ventricular rhythm, determination of the electrical axis of the heart, measurement and evaluation of waves and intervals P, PQ, QRS, QT, RR-average, with determination of heart rate);
- mechanisms of arrhythmias, classification of heart rhythm and conduction disorders;
- ECG - signs of violations of automaticity and excitability functions, ECG signs of arrhythmias and blockades;
- ECG changes in various clinical forms of coronary artery disease;
- ECG for metabolic and electrolyte disorders;
- ECG with hypertrophy of heart chambers;
- possible variants of ECG changes in diseases of the respiratory system, nervous system, digestive organs and kidney diseases;
- the principle of bicycle ergometry and treadmill test methods, test termination criteria; the main criteria for selecting patients for the exercise test;
- methods of conducting pharmacological ECG tests and their evaluation;
- the main criteria for selecting patients for daily ECG monitoring.

Be able:

- record the ECG in the generally accepted 12 leads;
- interpret the 12-lead electrocardiogram (estimate the voltage, the source of the ventricular rhythm, determine the electrical axis of the heart, measure and evaluate the ECG waves and intervals);
- to diagnose rhythm and conduction disorders of the patient based on clinical manifestations and electrocardiogram,
- analyze ECG changes in emergency situations and provide emergency assistance;
- to identify ECG signs of hypertrophy of the heart and evaluate primary disturbances of repolarization processes ("systolic overload") in left ventricular hypertrophy;
- identify signs of focal (myocardial infarction, post-infarction cardiosclerosis) and diffuse changes in the myocardium (violations of repolarization processes associated with ischemia, metabolic and electrolyte changes), evaluate them and carry out their differential diagnosis;
- formulate a conclusion based on ECG data;
- give a clinical assessment of the VEM and treadmill research data;
- give an assessment of the data of pharmacological ECG samples;
- give a clinical assessment of daily ECG monitoring data;
- determine the features of the ECG in case of electrocardiographic syndromes and phenomena, analyze the ECG in case of electrocardiostimulation;
- correctly take an anamnesis, be able to identify the symptoms of a heart rhythm disorder and carry out risk stratification.

3. Learning outcomes of the discipline

Integrative final program learning results, the formation of which is facilitated by the educational discipline (according to OPP 222 "Medicine").

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. Understanding and knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.

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 related interdisciplinary problems.

4. To highlight and identify leading clinical symptoms and syndromes (according to list 1 - #2-7, 9, 10, 11, 15, 17, 19-23, 25, 26-28, 30, 31, 34, 36, 37, 39, 41, 43, 49, 52, 55, 56); according to standard methods, using the previous data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2 - #1, 3-6, 9, 25, 38, 40, 41, 43-49, 51-53, 55, 58, 60, 63-65, 69-71, 76, 80-82, 85, 87, 91, 93, 94, 95, 96, 98, 100, 101, 103, 105, 106, 108, 110, 113, 115, 127-129, 130, 132, 134, 136-140, 145, 156, 159, 160).

5. Collect complaints, history of life and illness, assess 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 about the diagnosis (according to list 4 - #1-7, 10, 12, 13 -19, 20, 25, 26-28, 30-32, 34-36, 40, 42, 43, 46-49), taking into account the age of the patient.

6. To establish the 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 the control of the head physician in the conditions of a health care institution (according to list 2 - #1, 3-6, 9, 25, 38, 40, 41, 43-49, 51-53, 55, 58, 60, 63-65, 69-71, 76, 80-82, 85, 87, 91, 93, 94, 95, 96, 98, 100, 101, 103, 105, 106, 108, 110, 113, 115, 127-129, 130, 132, 134, 136-140, 145, 156, 159, 160).

7. Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4 - #1-7, 10, 12, 13-19, 20, 25, 26-28, 30-32, 34-36, 40, 42, 43, 46-49), patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2 - #1, 3-6, 9, 25, 38, 40, 41, 43-49, 51-53, 55, 58, 60, 63-65, 69-71, 76, 80-82, 85, 87, 91, 93, 94, 95, 96, 98, 100, 101, 103, 105, 106, 108, 110, 113, 115, 127-129, 130, 132, 134, 136-140, 145, 156, 159, 160).

8. Determine the main clinical syndrome or what causes the severity of the victim/victim's condition (according to list 3 - #2, 3, 8, 11, 18, 19, 24, 31) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of the health care institution, outside its boundaries) including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.

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

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

25. 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.

27. Communicate freely in the state language and in English, both orally and in writing to discuss professional activities, research and projects.

4. Content and logistics of the discipline

"Clinical electrocardiography" module	X semester 60 hours/ 2 credits	20 lectures Practical lessons - 10 Independent work - 30
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The discipline includes 5 topics that are combined into content module 1.

Content module 1.

Topic 1. Electrophysiological mechanisms of heart functions (heart automatism, excitability, conduction, contractility). The structure and functions of drivers of the rhythm of the heart and the

conduction system. ECG recording technique. Formation of elements of a normal ECG and its characteristics.

Topic 2. ECG in case of disorders of automaticity and excitability.

Topic 3. ECG with conduction disturbances. Syndrome of premature excitation of the ventricles.

Topic 4. ECG with hypertrophy of heart chambers.

Topic 5. ECG with focal lesions of the myocardium.

The topics of the lecture course reveal the problematic issues of the relevant sections of the discipline:

Practical classes involve theoretical substantiation of the main issues of the topic and the acquisition of the following practical skills:

1) The ability to analyze, reproduce and use knowledge of electrocardiography in practical and educational activities.

2) The ability to clinically interpret, analyze and summarize the results of electrocardiography data, determine their place in the system of existing knowledge, observing the principles of scientific ethics, academic integrity and copyright.

3) Independently analyze, interpret, critically evaluate, generalize, systematize clinical and scientific data of violations of automaticity, excitability and conduction, their ECG characteristics and features in various clinical situations.

4) Select, analyze, interpret, correctly evaluate and creatively use electrocardiography data regarding approaches to differential diagnosis and the possibilities of risk stratification in diseases of the heart, blood vessels and other therapeutic diseases.

5) Be able to identify and outline unsolved problems regarding the diagnosis of patients with rhythm and conduction disorders, with subsequent determination of ways to solve them.

6) Choose, apply and improve modern research methods for patients with rhythm and conduction disorders.

7) Use the new knowledge gained as a result of the research regarding rhythm and conduction disorders in practical activities and the educational process.

8) Adhere to the principles of scientific ethics in working with patients with rhythm and conduction disorders.

9) Use the principles of academic integrity and bear responsibility for the reliability of the obtained and published scientific results.

Students' independent work includes preparation for practical classes and mid-term tests, studying topics for independent work outside the classroom, writing essays, preparing presentations, tables. Control of mastering topics of independent work outside the classroom is carried out at intermediate control classes and final control of the discipline.

Individual work includes researching scientific literature, preparing reviews on the given topics for presentation at meetings of the student scientific circle, performing scientific and practical research, participation in professional Olympiads, scientific and practical conferences, competitions of student scientific works.

Thematic plans of lectures, calendar plans of practical classes, thematic plan of independent work outside the classroom, scope and directions of individual work are published on the website of the department.

Route for receiving materials: Department of Internal Medicine No. 2/To the student/Full-time study/222Medicine/5th year/Educational and methodological materials/ or via the link [https://www.vnmua.edu.ua/Department of Internal Medicine #2#](https://www.vnmua.edu.ua/Department%20of%20Internal%20Medicine%20#2#). Access to the materials is carried out from the student's corporate account s000XXX@vnmua.edu.ua.

5. Forms and methods of monitoring learning success

Current control in practical classes	Methods: oral or written survey, testing, electronic survey, decoding of ECG tasks, <i>pconducting instrumental studies, their interpretation and evaluation of their results (drawing</i>
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	<i>up a protocol in a workbook)</i>
Control of assimilation of the thematic section of the discipline at intermediate control classes	Methods: oral or written survey, electronic testing, solving ECG problems, <i>control of practical skills</i>
Final semester control (credit) at the end of the 10th semester (if provided by the curriculum)	According to the regulation on the organization of the educational process at VNMU named after E. Pirogov (link https://www.vnmua.edu.ua/Yamschenkainformation/Maindocuments)
Means of diagnostics of learning success	Theoretical questions, tests, clinically-oriented situational tasks, practical tasks, demonstration of practical skills

6. Evaluation criteria

Assessment of knowledge is carried out in accordance with the Regulation on the organization of the educational process at VNMU named after E. Pirogov (link <https://www.vnmua.edu.ua/Yamschenkainformation/Basicdocuments>), in accordance with the requirements of the program and the Instructions for evaluating students' educational activities in the context of the implementation of the European credit and transfer system for the organization of the educational process, approved by the Ministry of Health of Ukraine (letter of the Ministry of Health of Ukraine No. 08.01-47/10395 dated 04.15.2014).

Current control	According to the four-point system of traditional evaluations: 5 "excellent", 4 "good", 3 "satisfactory", 2 "unsatisfactory"
Intermediate separation controls	According to the four-point system of traditional evaluations
Control of practical skills	According to the four-point system of traditional evaluations
Test	On a 200-point scale (the average arithmetic grade for the semester is converted into points) Scored: from 120 to 200 points Not admitted: less than 120 points (see Grading scale)
Final control of discipline	<i>Sum of points for pre-examination testing (12-20 points) and oral survey (38-60 points) (for disciplines included in Step 1,2)</i> Exam grade: 71-80 points - "excellent" 61-70 points - "good" 50-60 points - "satisfactory" Less than 50 points - "not satisfactory"/failed
Assessment of discipline:	Current academic performance - from 72 to 120 points (conversion of the average traditional grade for practical classes on a 120-point scale): 60% of the grade for the discipline Final control - from 50 to 80 points: 40% of the grade for the discipline Individual work - from 1 to 12 points Total from 122 to 200 points.

Discipline assessment scale: national and ECTS

The sum of points for all types of educational activities	ECTS assessment	Evaluation on a national scale	
		for an exam, course project (work), practice	for credit
180-200	AND	perfectly	counted
170-179.9	IN	fine	
160-169.9	WITH		

141-159.9	D	satisfactorily	
122-140.99	IS	satisfactorily	-
120-140.99	IS	-	counted
119-61	FX	unsatisfactory with the possibility of reassembly	not counted with the possibility of retaking
1-60	F	unsatisfactory with mandatory repeated study of the discipline	not enrolled with mandatory repeated study of the discipline

7. Academic discipline/course policy

The student has the right to receive high-quality educational services, access to modern scientific and educational information, qualified advisory assistance during the study of the discipline and mastery of practical skills. The policy of the department during the provision of educational services is student-centered, based on regulatory documents of the Ministry of Education and the Ministry of Health of Ukraine, the university charter and the procedure for providing educational services, regulated by the basic provisions of the organization of the educational process at VNMU named after E. Pirogov and principles of academic integrity.

Observance of the rules of procedure of the VNMU, safety equipment in practical classes.

Requirements for preparation for practical classes. The student must come to the practical session on time, theoretically prepared according to the topic, in clothes that provide access to the clinical base (gown, change of shoes, mask), necessarily a certificate about vaccination or about the transfer of COVID19.

The student must observe safety rules during practical classes and during his stay in the premises of the department.

Use of mobile phones and other electronic devices. The use of mobile phones and other electronic devices is allowed during an electronic test or survey; not prohibited for the purpose of searching for information according to the purpose and tasks of the practical session).

Academic integrity. While studying the discipline, the student must be guided by the Code of Academic Integrity of VNMU named after E. Pirogov (<https://www.vnmue.edu.ua/general-information/Main-documents/Code-of-academic-integrity>). If the norms of academic integrity are violated during the current and final examinations, the student receives a grade of "2" and must work it out to his teacher in the prescribed manner within two weeks after receiving an unsatisfactory grade.

Skipping classes. Missed classes are made up in accordance with the procedure established in the Regulations on the Organization of the Educational Process at VNMU named after E. Pirogov (link <https://www.vnmue.edu.ua/General-information/Basic-documents>) at the time determined by the practice schedule (published on the department's website <https://www.vnmue.edu.ua/Department-of-Internal-Medicine-No.-2#>) to a regular teacher. In order to make up the missed class, the student must confirm theoretical knowledge and practical skills when communicating with the teacher. Workup of missed lectures is carried out after providing a summary of the lecture or writing an informative message or preparing one's own presentation on the topic of the missed lecture.

The procedure for admission to the final control of the discipline listed in the Regulation on the organization of the educational process at VNMU named after E. Pirogov (link <https://www.vnmue.edu.ua/General-information/Main-documents>). Students who have not missed unworked practical classes and lectures and have received an average traditional grade of at least "3" are admitted to the final examination.

Additional individual points. Individual points from the discipline (from 1 to 12) a student can receive for individual work, the scope of which is published on the department's website in the teaching and methodical materials of the discipline, the number of points is determined by the results of the IRS according to the Regulations on the Organization of the Educational Process at

VNMU named after E. +Pirogova ([linkhttps://www.vnmu.edu.ua/ Generalinformation/Main documents](https://www.vnmu.edu.ua/Generalinformation/Maindocuments)).

Resolution of conflict issues.In the event of misunderstandings and claims against the teacher due to the quality of educational services, knowledge assessment and other conflict situations, the student must first notify the teacher of his/her claims. If the conflict issue is not resolved, the student has the right to submit an appeal to the head of the department in accordance with the Regulation on consideration of appeals by applicants for higher education at VNMU named after E. Pirogov ([https://www.vnmu.edu.ua/ Generalinformation/Main documents](https://www.vnmu.edu.ua/Generalinformation/Maindocuments)).

Policy in the conditions of distance learning.The distance learning procedure is regulated by the Regulation on the introduction of elements of distance learning at VNMU named after E. Pirogov ([https://www.vnmu.edu.ua/ Generalinformation/Main documents](https://www.vnmu.edu.ua/Generalinformation/Maindocuments)). The main training platforms for conducting training sessions are Microsoft Team, Google Meets. The procedure for conducting practical classes and lectures, exercises and consultations during distance learning is published on the department's website ([https://www.vnmu.edu.ua/Department of Internal Medicine No. 2/ To the student orhttps://www.vnmu.edu.ua/department of internal medicine No. 2/ News](https://www.vnmu.edu.ua/DepartmentofInternalMedicineNo.2/Tothestudentorhttps://www.vnmu.edu.ua/departmentofinternalmedicineNo.2/News)).

Feedbackwith the teacher is carried out through messengers (Viber, Telegram, WhatsApp) or e-mail (at the choice of the teacher) during working hours.

8. Educational resources

1. Educational and methodological support of the discipline is published on the website of the department ([https://www.vnmu.edu.ua/department of internal medicine No. 2/ to the student](https://www.vnmu.edu.ua/departmentofinternalmedicineNo.2/tothestudent)). Consultations are held twice a week according to the consultation schedule.
2. **Schedule and distribution of groups by teachers**published on the web page of the department ([https://www.vnmu.edu.ua/department of internal medicine No. 2/ To the student](https://www.vnmu.edu.ua/departmentofinternalmedicineNo.2/tothestudent)).
3. **Questions for intermediate and final discipline controls**published on the web page of the department ([https://www.vnmu.edu.ua/department of internal medicine No. 2/ to the student](https://www.vnmu.edu.ua/departmentofinternalmedicineNo.2/tothestudent)).

Recommended Books

Basic theoretical

1. Мурашко В.В. Электрокардиография : учеб. пособие / В.В. Мурашко, А.В. Струтинский – [9-е изд.] – М. : МЕДпрофинформ, 2008. – 320 с.
2. Струтинский А.В. Электрокардиограмма: анализ и интерперетация : учеб. пособие / А.В. Струтинский – М. : Медицина, 2007 – 208 с.

Basic practical

1. Орлов В.Н. Руководство по электрокардиографии.–7-е изд., испр. – М.: ООО «Издательство «Медицинское информационное агентство», 2012. –528 с.
2. Струтинский А.В. ЭКГ / А.В. Струтинский. – М. : МЕДпресс- информ, 2005. – 224 с.

Auxiliary

1. Functional diagnostics: tutorial. for intern doctors and trainee doctors (f-tiv) post-dip. Ministry of Health of Ukraine / О. Й. Жарінов [та ін.] ; ред.: О. Й. Жарінов, Ю. А. Іванів, В. О. Куць. - Київ : Четверта хвиля, 2018. - 736 с.
2. Коваленко В. Н. Руководство по кардиологии / В. Н. Коваленко. – К.: Морион, 2008. – 1424 с.
3. Тести з функціональної діагностики. Навчальний посібник для слухачів циклів спеціалізації та передатестаційних циклів / О. Й. Жарінов, Ю. А. Іванів, В. Й. Целуйко [та ін.]. – 4-те вид., доповнене і перероблене. – К.: Четверта хвиля, 2015. – 256 с.
4. Хемптон Д. Р. ЕКГ у практиці = The ECG in Practice = ЭКГ в практике : навч. посіб. / Д. Р. Хемптон ; пер. 6-го англ. вид. О. І. Ромаскевича ; наук. ред. перекладу проф. Н. М. Середюк, О. З. Скакун. - пер. 6-го вид. - Київ : ВСВ Медицина, 2018. - 560 с.

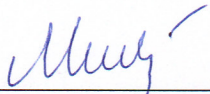
Information resources

1. Website of the library of VNMU (www.library.vsmu.edu.ua)

2. Website of the Verkhovna Rada of Ukraine: Access mode: <http://zakon.rada.gov.ua/>.
3. Information and legal portal "Laws of Ukraine": Access mode: <http://uazakon.com/>.
4. Public Health Center of the Ministry of Health of Ukraine <https://phc.org.ua/kontrol-zakhvoryuvan>

The syllabus for the discipline "Clinical electrocardiography" was discussed and approved at the meeting of the Department of Internal Medicine No. 2 (protocol No. 1, dated "30" "08" 2022)

Responsible for the course


(signature)

professor of HEI Nadiya MASIK
(name and surname)

Head of Department
of internal medicine No. 2


(signature)

professor of HEI Serhii SHEVCHUK
(name and surname)