Odessa National Medical University
Department of General Practice

Syllabus
Modern electrocardiographic diagnostic of the most common ECG syndromes

Volume	4 credits / 120 hours
Semester, year of study	1-2 years of study
Days, time, place	According to the schedule in the auditorium of the Department of General Practice, str. Tinysta, 8
Teacher(s)	Voloshyna Olena Borysivna, Doctor of Medicine, Professor, Head. Department of General Practice, Bugeruk Viktoriia Viktorivna, Candidate of Medical Sciences, Associate Professor of the Department of General Practice
Contact phone number	0487465671
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Workplace	Educational audience of the Department of General Practice, str. Tinysta, 8
Consultations	Face-to-face consultations: Thursday – from 14.00 to 16.00; Saturday – from 9.00 to 13.00 Online consultations: Thursday – from 14.00 to 16.00; Saturday – from 9.00 to 13.00 Microsoft Teams or via Telegram/Viber

COMMUNICATION.

Communication with graduate students is carried out through face-to-face meetings. In case of transition to distance learning, communication with graduate students will be carried out using E-mail and programs: Microsoft Teams, Moodle, Telegram and Viber.

COURSE ANNOTATION.

Subject of study of the discipline

The subject of study of the educational discipline «Modern electrocardiographic diagnostic of the most common ECG syndromes» is the theoretical basis of the

electrical activity of the heart, features of ECG registration, diagnosis of electrocardiographic syndromes.

Prerequisites and post-requisitions of the course (Place of discipline in the educational program)

The study of the educational discipline «Modern electrocardiographic diagnostic of the most common ECG syndromes» is carried out when the graduate student has acquired relevant knowledge of the main basic disciplines at the III level of higher education, as well as the following disciplines: history of philosophy 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, publication activity and scientometric databases), biotic and medico-legal foundations of scientific research. In turn, the educational discipline «Modern electrocardiographic diagnostic of the most common ECG syndromes» forms the basis of in-depth study by a graduate student of the following specialized disciplines of a therapeutic profile (internal medicine, cardiology, endocrinology, general practice-family medicine, side effects of drugs, pathological physiology, clinical pharmacology, clinical morphology) and a theoretical profile (normal and pathological anatomy, pharmacology, histology).

Course Objective

The purpose of the selective educational discipline «Modern electrocardiographic diagnostic of the most common ECG syndromes» is to acquire a complex of theoretical and practical knowledge regarding the physiology of normal and pathological electrical activity of the heart and to study the ECG signs of hypertrophy of the heart chambers, the ECG patients with rhythm and conduction disorders, the ECG with coronary heart disease, myocarditis, and electrolyte disorders.

Objectives of the discipline:

- the formation of a system of knowledge regarding the modern ECG diagnosis of major heart diseases among the holders of the Doctor of Philosophy degree.
- deepening of doctoral degree holders' professional skills regarding timely ECG diagnosis of acute cardiac conditions (acute coronary syndrome, heart rhythm and conduction disorders) in accordance with international standards.
- providing Ph.D. degree holders with the skills of pedagogical mastery regarding the implementation of the results of scientific research in the educational process.

Expected results.

According to the results of the study of the discipline, graduate students must

know:

- theoretical foundations of bioelectric activity of the heart;
- ECG registration and assessment methodology;
- the origin of the main waves of a normal ECG and their deviations in hypertrophy of the heart, heart rhythm disorders, heart blocks;
- basic principles of ECG diagnosis of heart inflammation, ischemia, electrolyte or metabolic disorders.

be able to:

- register ECG, program Holter ECG monitoring;
- have the skills to determine ECG signs of emergency conditions (acute myocardial infarction, acute heart rhythm and conduction disturbances, pulmonary embolism);
- to determine the diagnostic tactics of long-term ECG monitoring of international recommendations;
- orient yourself in international recommendations regarding ECG monitoring in cardiac diseases.

COURSE DESCRIPTION

Forms and methods of teaching

The course is taught int he form of practical classes (66 hours), as well as through the organization of independent work of graduate students (54 hours); total – 120 hours (4 credits).

The study of the discipline is implemented on the basis of the following teaching methods:

- according to the dominant means of learning: verbal, visual;
- solving creative problems;
- blitz poll;
-group discussions on problem situations;
- performance of written tasks;
- individual control interview;
- logical exercises;
- role-playing (business) games;
- situational tasks ("case method");
- problem teaching method, which is aimed at forming students' ability to dialogue and the ability to defend their own opinions;
- the "brainstorming" learning method, which encourages listeners to be creative and find alternative methods for solving the proposed problems through free expression of thoughts.

The content of the discipline.

Topic 1. Anatomical and physiological basis of electrocardiography.

Topic 2. Methodology of ECG registration.

Topic 3. Functional ECG samples.

Topic 4. Long-term ECG monitoring.

Topic 5. Analysis of heart rhythm and conduction.

Topic 6. ECG - diagnosis of hypertrophy and overload of various parts of the heart.

Topic 7. ECG - diagnosis of blockade of the legs of the bundle of His and the branches of the left leg.

Topic 8. Disturbance of conductivity. AV blocks.

Topic 9. ECG - diagnosis and differential diagnosis of paroxysmal tachycardia.

Topic 10. ECG - diagnosis and differential diagnosis of extrasystolic rhythm disorders.

Topic 11. ECG diagnosis and differential diagnosis of atrial fibrillation and flutter.

Topic 12. ECG - diagnosis of myocardial infarction. Analysis of the ECG of patients with myocardial infarction of different localization.

Topic 13. ECG - diagnosis of chronic ischemic heart disease.

Topic 14. ECG changes in certain heart diseases, PE, electrolyte disorders and as a result of the action of drugs.

Recommended Reading

Basic (base):

1. Clinical Guidelines by Consensus Recording a Standard 12-Lead Electrocardiogram. An approved method by the Society for Cardiological Science & Technology (SCST) (Society for Cardiological Science and Technology, 2017)
2. Update to Practice Standards for Electrocardiographic Monitoring in Hospital Settings A Scientific Statement From the American Heart Association 2017
3. AHA/ACCF/HRS Recommendations for the standardization and interpretation of the electrocardiogram. American Heart Association, American College of Cardiology Foundation, Heart Rhythm Society
   DOI: 10.1016/j.jacc.2008.12.013

Secondary

1. Bhatt DL, Lopes RD, Harrington RA. Diagnosis and Treatment of Acute Coronary Syndromes: A Review. JAMA. 2022 Feb 15;327(7):662-675. doi: 10.1001/jama.2022.0358. Erratum in: JAMA. 2022 May 3;327(17):1710. PMID: 35166796.
2. Mahtani AU, Nair DG. Supraventricular Tachycardia. Med Clin North Am. 2019 Sep;103(5):863-879. doi: 10.1016/j.mcna.2019.05.007. PMID: 31378331.
3. Long B, Brady WJ, Bridwell RE, Ramzy M, Montrief T, Singh M, Gottlieb M. Electrocardiographic manifestations of COVID-19. Am J Emerg Med. 2021 Mar;41:96-103. doi: 10.1016/j.ajem.2020.12.060. Epub 2020 Dec 29. PMID: 33412365; PMCID: PMC7771377.
4. Abela M, Sharma S. Electrocardiographic interpretation in athletes. Minerva Cardiol Angiol. 2021 Oct;69(5):533-556. doi: 10.23736/S2724-5683.20.05331-1. Epub 2020 Oct 15. PMID: 33059398.
5. Lau DH, Linz D, Sanders P. New Findings in Atrial Fibrillation Mechanisms. Card Electrophysiol Clin. 2019 Dec;11(4):563-571. doi: 10.1016/j.ccep.2019.08.007. PMID: 31706465.
6. Buttà C, Zappia L, Laterra G, Roberto M. Diagnostic and prognostic role of electrocardiogram in acute myocarditis: A comprehensive review. Ann Noninvasive Electrocardiol. 2020 May;25(3):e12726. doi:

10.1111/anec.12726. Epub 2019 Nov 28. PMID: 31778001; PMCID: PMC7958927.

Information resources

1. National Scientific Medical Library of Ukraine http://library.gov.ua/
2. Vernadsky National Library of Ukraine http://www.nbuv.gov.ua/
3. BMJ Clinical Evidence http://clinicalevidence.bmj.com
4. Centers for Disease Control and Prevention (CDC) https://www.cdc.gov/
5. The Cochrane Collaboration The Cochrane Library http://www.cochrane.org/
6. Clinical Knowledge Summaries (CKS) http://prodigy.clarity.co.uk/

EVALUATION

Current control is carried out in practical classes in accordance with the formulated tasks on each topic. When evaluating educational activities, standardized control methods are preferred: oral survey, structured written works, discussions, role games, reports. the arithmetic mean of all grades received by the graduate student (applicant) on a traditional scale, rounded to 2 (two) decimal places, for example, 4.75.

Evaluation of current control in the discipline:

The value of the assessment **is "excellent"**: the graduate student shows special creative abilities, is able to independently acquire knowledge, without the help of the teacher finds and processes the necessary information, is able to use the acquired knowledge and skills to solve problems, is able to produce innovative ways to solve problems, convincingly argues answers, independently reveals his own talents and inclinations.

The value of the assessment **is "good"**: the graduate student is fluent in the studied volume of material, applies it in practice, freely solves exercises and problems in standard situations, independently corrects the mistakes made, the number of which is insignificant.

The value of the assessment **is "satisfactory"**: the graduate student is able to master a significant part of the theoretical material, but mainly in the reproductive form, reveals knowledge and understanding of the main provisions, with the help of the teacher can analyze the educational material, correct errors, among which there are a significant number of significant ones.

The value of the assessment **is "unsatisfactory"**: the graduate student owns the material at the level of individual fragments that make up an insignificant part of the educational material.

Forms and methods of final control

The final control in the discipline «Modern electrocardiographic diagnostic of the most common ECG syndromes» is a test.

1) the average current score as the arithmetic average of all current grades;

2) the traditional score for the standings.

The obtained average score for the discipline by multiplying it by 40 (the resulting score is rounded to whole) is converted into a score on a 200-point scale, which, in turn, is translated into a traditional score in the discipline on a 4-point scale.

Average score for discipline	**The ratio received by the student average score for discipline to the maximum possible value of this indicator**	**Score with Discipline by 4-point Scale (traditional assessment)**
4,5 – 5,0	90-100%	5
3,75 – 4,0	75-89%	4
3,0 – 3,7	60-74%	3

Independent work

Evaluation of the independent work of graduate students and applicants, which is provided for in the topic along with the classroom work, is carried out during the current control of the topic at the relevant classroom lesson, as well as at the final control.

COURSE POLICY ("rules of the game")

Deadlines and Rescheduling Policy

Tasks must be completed on time according to the deadline. For the late completion of the task, the graduate student receives an unsatisfactory assessment. If the applicant for higher education was absent from the classes for any reason, then the training is carried out within the time limits set by the teacher in accordance with the "Regulations on the organization of the educational process in ONMedU" (link to the regulations on the university website https://onmedu.edu.ua/wp-content/uploads/2020/01/osvitnij proces.pdf).

Reassembly is carried out in accordance with the approved schedule. Academic Integrity Policy the policy of the educational component is based on the principles of academic integrity (link to the provisions on the university website https://onmedu.edu.ua/wp-content/uploads/2020/07/polozhennja-pro dobrochesnist.pdf) and is determined by the system of requirements that the teacher imposes on the applicant when studying the educational component:

- independent implementation of educational tasks, tasks of current and final control of learning outcomes (for persons with special educational needs, this requirement is applied taking into account their individual needs and capabilities);
- links to sources of information in case of using ideas, developments, statements, information.

Visit and Lateness Policy

To obtain a satisfactory grade, it is mandatory to attend and work in classroom classes. The delay of the graduate student is allowed no more than 10 minutes.

Mobile devices

In class, it is permissible to use mobile devices with the permission of the teacher.

Behavior in the audience

When entering the audience, the following values should be cultivated: respect for colleagues; tolerance towards others; susceptibility and impartiality; reasoning of agreement or disagreement with the opinion of other participants in the discussion, as well as their own opinion; honoring the dignity of the opponent's personality during communication; adherence to the ethics of academic relationships.

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