# Kharkiv National Medical University

# The VI Faculty for International Students of KhNMU Education and Research Institute for Foreign Nationals

# Department of Propedeutics to Internal Medicine #1, Fundamentals of Bioethics and Biosafety

Educational program for training specialists of the second (master's) level

of higher education 22 "Health care"

# in specialty 222 "Medicine"

SYLLABUS OF THE COURSE

FUNDAMENTALS OF ELECTROCARDIOGRAPHY

|  |  |
| --- | --- |
| The syllabus of the discipline was approved at the meeting of the department of Propedeutics to Internal Medicine #1, Fundamentals of Bioethics and Biosafety  Protocol from  “ 27 ” August 2020 № \_15\_  Head of the Department  Ashcheulova T. V  (signature) (surname and initials)  “ 27 ” August 2020 | Approved by the methodical commission on problems of Professional Educational in therapeutic profile of KhNMU  Protocol from  “ 31 ” August 2020 № \_1\_  Head  professor Kravchun P.G. (signature) (surname and initials)  “ 31 ” August 2020 |

Kharkiv 2020

**Information about teachers:**

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| --- | --- |
| Name | Ashcheulova Tetiana Vadymivna  Ambrosova Tetiana Mykolaivna  Pytetska Nataliia Ivanivna  Kompaniiets Kira Mykolaivna  Latoguz Yurii Ivanovich  Smyrnova Victoriia Ivanivna  Shapovalova Svetlana Oleksandrivna  Gerasimchuk Nina Mykolaivna  Kochubei Oksana Anatoliivna  Honchar Oleksii Volodimirovich  Sytina Irina Vasylivna  Molodan Dmytro Volodimirovich  Kysylenko Kateryna Volodymyrivna |
| Contact phone | 057-725-07-58 |
| E-mail: | pim1bioethics@gmail.com |
| Timetable | According to the schedule of the educational department |
| Consultations: | According to the schedule posted on the information stand of the department of Propaedeutics of Internal Medicine №1, Fundamentals of Bioethics and biosafety  **Online consultations**: schedule and venue by prior arrangement with the teacher. |

**Location:** 61035, Kharkiv, 137 Gagarina Ave.; Rooms for practical classes are located on the 1-t floor. Lecture room – according to the schedule of the educational department

Rooms for practical classes are located on the 4-th floor, rooms 27, 35, 36.

**Discipline information**

1. **Description of the discipline**

**Syllabus**discipline " Basics of electrocardiography " is composed for educational and professional program "Medicine" second (master's) level , industry knowledge 22 "Health", specialty 22 2 " Medicine " - masters.

**Description of the discipline (abstract) .**

Basics of electrocardiography is selective disciplines th clinical phase of undergraduate training of doctors, the study of which allows students to learn general principles of using method electrocardiography for diagnosing heart disease . So, the basics of electrocardiography - Study clinical discipline that studies the physical basis of electrocardiographic examination methods , techniques ku survey , options and variations of normal electrocardiogram , characteristic ECG and displays certain diseases of the cardiovascular system .

Organization of educational process is carried out according to the requirements of the European credit transfer system of the educational process , which is based on determining the workload applicant higher education and necessary to achieve defined results nav Channa , and is recorded in credits ECTS. The amount of one loan is 30 hours. The workload of one academic year is usually 60 ECTS credits. Credit ECTS includes all types of student work: auditorium, independent, undergone practical training, certification training and preparation, and so on .

**Subject**to yvchennya discipline " Basics of electrocardiography " is a set of theoretical and practical issues aimed at mastering the theoretical principles and objectives dolohiyi of elekrokardiohrafichnoho research and electrocardiographic second semiotics of the most common diseases of the cardiovascular system .

**2 . The purpose and objectives of the discipline**

1.1. The goal of teaching " Basics of electrocardiography " is acquiring student basic theoretical knowledge and professional competencies electrocardiographic th survey Heart I .

1.2. The main tasks of studying the discipline " Fundamentals of Electrocardiography " are:

- Mastering by the student of theoretical knowledge necessary for performance of electrocardiographic research

- Mastering the practical techniques and methods of electrocardiographic examination of the heart

- Assimilation of electrocardiographic semiotics of the most common diseases of the cardiovascular system .

1. **Discipline status (normative ) and discipline format ( *mixed*)**

1. **Teaching methods**

According to the sources of knowledge, the following teaching methods are used: verbal - story, explanation, lecture, instruction; visual - demonstration, illustration; practical - practical work, tasks.

By the nature of the logic of cognition , the following methods are used :

analytical , synthetic , analytical-synthetic , inductive , deductive .

According to the level of independent mental activity, the following methods are used :

problematic , partially exploratory , research .

According to the curriculum, there are practical classes, independent work of students (VTS).

Practical classes lasting 4 academic hours are held in a therapeutic clinic and consist of two structural parts:

1) mastering the theoretical part of the topic,

2) solving situational tasks and test-control of mastering the material.

Departments teaching the discipline have the right to make changes to the curriculum within 15% depending on the direction of scientific and practical work of the department, organizational and diagnostic capabilities of its clinical bases, but must meet the overall requirements of the discipline in accordance with the ultimate goals of OKH and OPP in the direction of training and curriculum.

1. **Recommended Books**

**Basic**

1. Zharinov OY, Kuts VO (ed.) Fundamentals of electrocardiography. - Lviv .: MS, 2017. - 240 p.
2. Kovaleva. O.N. , S afargalina -Kornilova NA . Propaedeutics of internal medicine . Textbook with the stamp of the Ministry of Education and Science, Ministry of Health . - K .: VSI "Medicine". - 2013. 752 p.
3. Kovaleva OM , Ащеулова Т.В. "Propaedeutics of internal medicine " Part 1. Diagnosis . Textbook with the stamp of the Ministry of Education and Science, Ministry of Health . - Vinnytsia: A new book. - 2017. - 424 p. (in English).
4. Kushakovskyy M. S. Hryshkyn Yu N. arrhythmia of the heart ( disorders of heart rhythm and violations conductivity . Causes , Mechanisms , эlektrokardyohrafycheskaya and эlektrofyzyolohycheskaya diagnostics , Clinic , Treatment ): guidance for doctors . - 4th ed ., Corrected . and ext . / M. S. Kushakovskyy , JN Grishkin . - St. Petersburg: OOO " Publishing Folyant ", 2014. - 720 p .: il .
5. Murashko VV Electrocardiography : textbook . allowance / VV Murashko, A.V. Струтынский . - 14th ed ., Reworked . - М .: МЕДпре c с- информ , 2017. - 360 с. : ill .
6. Orlov, VN Guide to electrocardiography / VN Orlov. - 9th ed ., Corrected . - Moscow: LLC " Medical Information Agency", 2017. - 560 p .: ill .

**Auxiliary**

1. Comprehensive Electrocardiology / Macfarlane PW, van Oosterom A., Pahlm O., Kligfield P., Janse M., Camm J. ( Eds .) - 2 nded. - Springer, 2011. - 2291 p.

**Information resources**

1. https://litfl.com/ecg-library/ecg-references/

2. http://ecglibrary.com/

3. https://en.ecgpedia.org/

4. https://skillstat.com/tools/ecg-simulator

5. https://ekg.academy/

**6**. **Prerequisites and co-requisites of the discipline**

**Interdisciplinary links**: according to the curriculum, the study of the discipline " Fundamentals of Electrocardiography " is carried out in VII - VIII semesters, after mastering the knowledge of certain sections of biological physics, human anatomy , histology, physiology and pathophysiology, with which the discipline program is closely integrated . In turn, educati and disciplines and " Basics of electrocardiography " contributes to a better understanding of student bases electrocardiographic diagnosis of heart disease in the study of these clinical disciplines - internal medicine, family medicine, foundations cardiology gies and pulmonology , anesthesiology and intensive care, providing forming Integration Issues th of these disciplines and the ability to apply electrocardiographic examination method the patient in further education and in professional activities .

*Prerequisites .*The study of the discipline involves the prior mastering of disciplines in medical and biological physics, human anatomy, histology, physiology and pathophysiology in higher education.

*Postrequisites .*The main provisions of the discipline should be applied in the study of professional disciplines.

1. **Learning outcomes**

The discipline ensures that students acquire the following ***competencies*:**

- *integral****:***

ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements.

- *general :*

* 1. Ability to abstract thinking , analysis and synthesis.
  2. Ability to learn and master modern knowledge .
  3. Ability to apply knowledge in practical situations .
  4. Knowledge and understanding of the subject area and understanding of professional activity .
  5. Ability to adapt and act in a new situation .
  6. Ability to make informed decisions .
  7. Skills in the use of information and communication technologies .

- *special ( professional , subject ):*

1. Ability to establish a syndromic diagnosis of the disease .
2. The ability to diagnose urgent states .
3. Ability to carry out sanitary and hygienic and preventive measures .
4. Ability to keep medical records.

Also, the study of this discipline forms in students *social skills ( soft skills )*: communication (implemented through: the method of working in pairs and groups, brainstorming, the method of self-presentation), teamwork (implemented through : project method, openwork saw ), conflict -management (implemented through: dramatization method, game methods), time management (implemented through: project method, group work, training), leadership skills (implemented through: group work, project method, self-presentation method).

Detailing of competencies according to NQF descriptors in the form of " Competence Matrix ".

**Competence matrix**

| **№** | **Competence** | **Knowledge** | **Skills** | **Communication** | **Autonomy and responsibility** |
| --- | --- | --- | --- | --- | --- |
| **Integral competence** | | | | | | |  |
| 1. | On the usefulness solve common and complex specialized tasks and practical problems in careers in health care or in learning, which provides research and / or innovation and implementation is characterized by complexity and uncertainty of conditions and requirements. | | | | | |  |
| **General competencies** | | | | | | |  |
|  | Ability to abstract thinking, analysis and synthesis, the ability to learn and be modernly trained | Know the methods of analysis, synthesis and further modern learning | Be able to analyze professional information, make informed decisions, acquire modern knowledge | Establish appropriate commun - ing for achievements - ing purposes. | Bear responsibility - tions for the timely acquisition of modern knowledge . |
|  | Ability to apply knowledge in practical situations | Have specialized conceptual knowledge, being in the learning process. | In myths solvability - wool complicated backside chi and problems that arise in professional activities. | Clearly not - ambiguous untilit - Senna own conclusions, knowledge and explanations that they are grounded - tion to specialists and non-specialists. | Responsible for making decisions in difficult conditions |
|  | Knowledge and understanding of the subject area and understanding of professional activity | Have in-depth knowledge of the structure - tours profession. | To be able to carry out professional Diyala - ness that needs updating and integration of knowledge. | Ability effective - wise to form a communication strategy in professional activities | Bear responsibility - tions for occupations - tion development, pass - ness away to - Shogo professional Nav - Channa high-autonomous - ness. |
|  | Ability to adapt and act in a new situation. | Know the types and methods of adaptation, principles of action in a new situation | To be able to use tools samorehu - lyatsiyi to be able to at - hundred - sovuvatysya to new situations (circumstances) life and work. | Establish appropriate commun - ing to reach - Nan - ing result. | Bear responsibility - ness timely use of methods of self-regulation. |
|  | Ability to make an informed decision | Have the principles of comprehensive critical analysis of input data | To be able to make informed RI - tion, which best meets the patient disposable ultrasound symptom | Use strategy Union - ing skills and interpersonal interaction | Bear responsibility - tions for the choice of tactics and research and an opinion on the results |
|  | Skills in the use of information and communication technologies | Have deep knowledge in the field of information and communication technologies used in professional activities | Able are used - vuvaty informa - tion and commune - tion technology professional ga - a meadow in need of renovation and integration of knowledge. | Use information and communication technologies in professional activities | Bear responsibility - tions for the development of professional knowledge and skills. |
| **Special (professional) competencies** | | | | | | |  |
| 1. 3 | Ability to establish a syndromic diagnosis of the disease | Have specialized knowledge about the anatomical and morphological features of the cardiovascular system ; al algorithms for the selection of leading symptoms and syndromes; methods of ultrasound examination; knowledge of human condition assessment. | In order to conduct an ultrasound examination of the cardiovascular system ; be able to make informed decisions about the form l spare wire Kleene co-instrumental syndrome | On the basis of normative documents to keep medical documentation of the patient (card of the inpatient , etc.). | Following ethical and Jurassic dychnyh rules adopted take responsibility for cha grounded tovanyh decisions and actions to correct the established son dromnoho diagnosis of disease |
| 1. 5 | Ability to diagnose emergencies | Mother, special Wani knowledge of people ynu, his organs and systems, standard methods of examination Liu dyny | Able , in the absence of information, using standard techniques, by making an informed decision to assess the human condition and the need for emergency care | Under any circumstances, in accordance with relevant ethical and legal norms, make an informed decision regarding the assessment of the human condition and the organization of non-essential medical measures depending on the human condition. | Be responsible for timely - ness and effective - ness for health - moves on diagnosing urgent conditions |
| 3. | Ability to plan and conduct sanitary, preventive and anti-epidemic measures, including infectious diseases | Know the system of sanitary and hygienic and preventive measures in a medical hospital .  Know the principles of asepsis and antiseptics | Have the skills to organize the sanitary and hygienic regime of the ultrasound diagnostics room. | From Nata principles for presenting informa - tion on Sanitary th state note- schen and observance ing g o-hospital and medical Ojo Ronnie mode jacks management structural units treatment system; use lectures and interviews. | Bear responsibility - tions for timely and high-quality event and from pro bakes ting self -sanitary and sanitary and health-protective mode main divisions diliv hospital  promoting a healthy lifestyle . |
| 4 . | Ability to keep medical records | Know formal documents in a professional first work of medical personnel , including modern computer information technology | To be able to determine the source and location of the desired information in dependence of its type ; in myths processed information and conduct an analysis of the received information | Get the necessary information from certain sources and analysis based on its shape - cotton appropriate conclusions | Be responsible for the completeness and quality of the analysis of information and conclusions based on its analysis. |

**Program learning outcomes**

Knowledge and understanding :

- obtaining individual general and specific fundamental and professionally oriented knowledge , abilities , skills , competencies necessary to perform typical occupational tasks , -related with its activities in the medical field to the appropriate position

- knowledge of the physiological characteristics of the human , health rights , support health , prevention of diseases , treatment of humans , the health of the population

Application of knowledge and understanding :

- ability to apply the acquired knowledge , skills and understanding to solve common problems of activities the doctor , the scope of application which provides lists of syndromes and symptoms , diseases , emergency conditions , laboratory and instrumental studies , medical manipulation

- collection of patient information

- establishing a preliminary clinical diagnosis of the disease

- evaluating the results of the survey , physical examination , data of laboratory and instrumentralnyh research

- diagnosing urgent conditions , determining the tactics of providing emergency medical care

- carrying out sanitary and hygienic and preventive measures

- maintaining medical records , processing of state , social and medical information

Formation of judgments :

- of the usefulness of exercise evaluation state health rights and provide him the support of considering the impact of the environment and other factors of health

**Learning outcomes :**

As a result of studying the discipline " Fundamentals of Electrocardiography " the student has

I. Ov to master modern knowledge about :

- physical principles of using electrocardiography in medical practice ;

- the principle s formation and normal ECG parameters ;

- methodical bases of carrying out electrocardiographic research ;

- electrocardiographic semiotics of the most common diseases of the cardiovascular system .

ІІ. Be able to apply the acquired knowledge in practical situations :

1. To demonstrate the technique elekrokardiohrafichn th research .
2. Demonstrate the ability to methodically accurately present the results of electrocardiographic examination in the form of a conclusion .
3. To determine the leading symptoms and syndromes in the clinic of internal diseases , taking into account the data of electrocardiographic examination .

**The content of the discipline**

              In studying the discipline " Basics of electrocardiography " given 9 0 hours - 3 , 0 ECTS credits 3 0 hours and of which is Classroom training (in the form of practical training - 30 hours) and 6 0 hours - independent work of students .

**Description of the discipline**

|  |  |  |
| --- | --- | --- |
| Name of indicators | Field of knowledge, direction of training, educational and qualification level | Characteristics of the discipline |
| **full-time education** |
| Number of credits - 3 | Training direction  22 "Health care" | Normative |
| The total number of hours is 9 0 | Specialty:  222 "Medicine" | **Year of preparation:** |
| 4 th |
| **Semester** |
| 7 th / 8 th |
| **Lectures** |
| Hours for full-time study:  classroom - 3 0  independent work of the student - 6 0 | Education level:  master | 0 years |
| **Practical, seminar** |
| 3 0 y. |
| **Laboratory** |
| 0 years |
| **Individual work** |
| 6 0 y. |
| **Individual tasks:**0 hours. |
| Type of control:  With alik |

**The structure of the discipline**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Names of sections of the discipline and topics | Number of hours | | | | | |
| Form of study (full-time) | | | | | |
| total | Including | | | | |
| cure | ave | lab | ind | cf. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Topic 1. Physical basis electrocar iohrafiyi . Method of electrocardiogram registration . | 6 | - | 2 | - | - | 4 |
| Topic 2. Electrophysiological basis of formation and parameters of a normal electrocardiogram . | 6 | - | 2 | - | - | 4 |
| Topic 3. Methods of decoding the electrocardiogram. Electrocardiographic signs of atrial overload. | 6 | - | 2 | - | - | 4 |
| Topic 4. Electrocardiographic signs of ventricular hypertrophy . | 6 | - | 2 | - | - | 4 |
| Topic 5. Electrocardiographic syndromes in coronary heart disease. | 6 | - | 2 | - | - | 4 |
| Topic 6. Pseudocoronary changes of the electrocardiogram. | 6 | - | 2 | - | - | 4 |
| Topic 7. Electrocardiography in the diagnosis of acute coronary syndrome and myocardial infarction. | 12 | - | 4 | - | - | 8 |
| Topic 8. Impaired conduction of the heart. In nutrishnoperedserdn and and inside shno ventricular conduction abnormalities. | 6 | - | 2 | - | - | 4 |
| Topic 9. Electrocardiographic signs of sinoauricular and atrioventricular block . | 6 | - | 2 | - | - | 4 |
| Topic 10. Violation of automaticity and excitability of the myocardium. Extrasystole and parasystole . | 6 | - | 2 | - | - | 4 |
| Topic 11. Electrocardiographic diagnosis of paroxysmal tachycardia . | 6 | - | 2 | - | - | 4 |
| Topic 12. Electrocardiographic signs of atrial fibrillation and flutter, ventricular fibrillation and flutter. | 6 | - | 2 | - | - | 4 |
| Topic 13. Rare electrocardiographic syndromes. | 6 | - | 2 | - | - | 4 |
| Topic 14. Credit. | 6 | - | 2 | - | - | 4 |
| Total hours of discipline | 90 | - | 30 | - | - | 60 |

**Topics of lectures - not provided.**

**Topics seminar sessions - not provided .**

**Topics of practical classes**

|  |  |  |
| --- | --- | --- |
| №  s / n | Name topics | Number  hours |
|  | Physical basis electrocar iohrafiyi . Method of electrocardiogram registration. | 2 |
|  | Electrophysiological bases of formation and parameters of a normal electrocardiogram . | 2 |
|  | Method of decoding the electrocardiogram. Electrocardiographic signs of atrial overload. | 2 |
|  | Electrocardiographic signs of ventricular hypertrophy. | 2 |
|  | Electrocardiographic syndromes in coronary heart disease. | 2 |
|  | Pseudocoronary changes in the electrocardiogram. | 2 |
|  | Electrocardiography in the diagnosis of acute coronary syndrome and myocardial infarction. | 4 |
|  | Impaired conduction of the heart. In nutrishnoperedserdn and and inside shno ventricular conduction abnormalities. | 2 |
|  | Electrocardiographic signs of sinoauricular and atrioventricular block . | 2 |
|  | Disorders of automaticity and excitability of the myocardium. Extrasystole and parasystole . | 2 |
|  | Electrocardiographic diagnosis of paroxysmal tachycardias . | 2 |
|  | Electrocardiographic signs of atrial fibrillation and flutter, ventricular fibrillation and flutter. | 2 |
|  | Rare electrocardiographic syndromes . | 2 |
|  | Test. | 2 |
| Total hours of practical training | | 30 |

**Topics of laboratory classes - not provided .**

**Independent work**

|  |  |  |
| --- | --- | --- |
| №  s / n | Name topics | Number  hours |
|  | Physical basis electrocar iohrafiyi . Method of electrocardiogram registration. | 4 |
|  | Electrophysiological bases of formation and parameters of a normal electrocardiogram . | 4 |
|  | Method of decoding the electrocardiogram. Electrocardiographic signs of atrial overload. | 4 |
|  | Electrocardiographic signs of ventricular hypertrophy. | 4 |
|  | Electrocardiographic syndromes in coronary heart disease. | 4 |
|  | Pseudocoronary changes in the electrocardiogram. | 4 |
|  | Electrocardiography in the diagnosis of acute coronary syndrome and myocardial infarction. | 8 |
|  | Impaired conduction of the heart. In nutrishnoperedserdn and and inside shno ventricular conduction abnormalities. | 4 |
|  | Electrocardiographic signs of sinoauricular and atrioventricular block . | 4 |
|  | Disorders of automaticity and excitability of the myocardium. Extrasystole and parasystole . | 4 |
|  | Electrocardiographic diagnosis of paroxysmal tachycardias . | 4 |
|  | Electrocardiographic signs of atrial fibrillation and flutter, ventricular fibrillation and flutter. | 4 |
|  | Rare electrocardiographic syndromes . | 4 |
|  | Test. | 4 |
| Total hours of practical training | | 6 0 |

**Individual tasks**

Individual tasks include: review of scientific literature, preparation of abstracts, conducting research and individual teaching and research tasks, writing abstracts of research and presentations at conferences.

**Discipline policy and values**

It is expected that students will attend all lectures and practical classes. If they missed classes, it is necessary to work it out (according to the schedule on the information stand of the department)

Written and homework should be done in full and on time, if students / - approx any questions, you can contact the teacher in person or by e-mail that the teacher / -ka naddast the first practice session.

During the **lecture**, students are recommended to keep a synopsis of the lesson and keep a sufficient level of silence. Ask questions to the lecturer / - ing - is perfectly normal.

**Practical training**

Active participation in the discussion in the classroom, students / - ing should be prepared in detail to understand the material, ask questions, express their views, debate. During the discussion it is important:

- respect for colleagues,

- tolerance for others and their experience,

- receptivity and impartiality,

- the ability to disagree with the opinion, but to respect the personality of the opponent / - ki ,

- careful argumentation of his opinion and the courage to change his position under the influence of evidence,

- self-expression, when a person avoids unnecessary generalizations, describes his feelings and formulates his wishes based on their own thoughts and emotions,

- obligatory acquaintance with primary sources.

A creative approach in its various manifestations is welcome. Students / - approx expected interest participation in local, national and international conferences, competitions and other events with the objective profile.

**Occupational Health**

The first lesson of the course will explain the basic principles of labor protection by conducting appropriate training. It is expected that everyone should know where the nearest evacuation exit is to the audience, where the fire extinguisher is, how to use it, and so on.

**Behavior in the audience**

**Basic "yes" and "no"**

It is important for students to follow the rules of good behavior at the university. These rules are common to all, as they relate to the entire faculty and staff / - ts , and not fundamentally different from conventional norms.

During classes it is allowed:

- leave the audience for a short time if necessary and with the permission of the teacher;

- drink soft drinks;

- take photos of presentation slides;

- actively participate during classes (see. The academic expectations of students / - s ).

forbidden:

- eat (except for persons whose special medical condition requires another - in this case, medical confirmation is required);

- smoking, drinking alcohol and even low-alcohol beverages or drugs;

- use obscene language or use words that offend the honor and dignity of colleagues and faculty;

- gambling;

- damage the material and technical base of the university (damage inventory, equipment; furniture, walls, floors, litter the premises and territories);

- shouting, shouting or listening to loud music in classrooms and even in corridors during classes.

**Plagiarism and academic integrity**

The Department of Propaedeutics of Internal Medicine №1, Fundamentals of Bioethics and Biosafety maintains zero tolerance for plagiarism. Male and female students are expected to constantly raise their awareness of academic writing. The first lessons will provide information on what to consider plagiarism and how to properly conduct research and scientific research.

The order of information on changes in Syllabus : necessary changes in Syllabus izatverdzhuyutsya on methodological problems with the Commission KhNMU training therapeutic profile and published on the site KhNMU, Online Chair of Internal Medicine №1, basics of bioethics and biosafety KhNMU

**Evaluation policy**

The European Credit Transfer and Accumulation System ( ECTS ) is a credit transfer and accumulation system used in the European Higher Education Area to provide, recognize, validate qualifications and educational components and to promote the academic mobility of higher education applicants. The system is based on determining the study load of the higher education student required to achieve certain learning outcomes and is accounted for in ECTS credits . The amount of one loan is 30 hours. The workload of one academic year is 60 ECTS credits . ECTS credit includes all types of student work: classroom, independent, practical training, preparation and preparation of certification, etc.

Assessment is one of the final stages of a student's learning activities and determining academic performance. Assessment is an opportunity to assert that the student has acquired the necessary knowledge, understanding, skills, competencies. Competence means the student's proven ability to use knowledge, skills and personal skills in learning or work situations. Competence is the ability to transfer knowledge into practice.

Different types of assessment scales are used in higher medical education: multi-point scale, national 4-point scale and ECTS scale. The results are converted from one scale to another according to the following rules. At Kharkiv National Medical University, the recommended multi-point scale is the 200-point scale. All examples in the Instructions are for a 200-point scale.

* ***The current educational activity****(hereinafter -****PND****)*is carried out by the teacher of the academic group, after mastering by students of each topic of the discipline and grades are set using a 4-point (traditional) system. At the end of the semester, the teacher automatically receives the average grade (to the nearest hundredth) for the current activity with the help of an electronic journal of the ACS system. In the future, if in the current semester the study of the discipline ends with a credit, the average score of the current success of the teacher of the department is translated into a 200-point scale ECTS.
* **The final semester control**is carried out after the completion of the study of the discipline in the form of a test, which is conducted by the teacher of the academic group at the last lesson of the discipline. Admission to the test is determined in the points of current educational activities, namely:  min - 12 0, max - 20 0 points. The grade in the discipline is equal to the grade of **PND**in points from min - 120 to max - 200 and corresponds to the traditional grade on a two-point scale : "credited", "not credited " .

**Evaluation of the success of training students for ECT S Organization educational process**

***Assessment of current learning activities (IPA)***

When assessing the mastery of each subject of the discipline ( **PND**), the student is graded according to the traditional 4-point system: "excellent", "good", "satisfactory" and "unsatisfactory".

              The final score for the current learning activity ( **PND**) is defined as the arithmetic mean of traditional grades for each lesson, rounded to 2 decimal places , and is converted into a multi-point scale according to the tables.

The recalculation of the average grade for **IPA**for disciplines that end with a test is carried out in accordance with the table. The minimum number of points that a student must score to get credit - 120 points, the maximum possible score - 200 points.

**Recalculation of the average score for current activities in 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 |
| 5 | 200 | 4.22-4.23 | 169 | 3.45-3.46 | 138 |
| 4.97-4.99 | 199 | 4.19-4.21 | 168 | 3.42-3.44 | 137 |
| 4.95-4.96 | 198 | 4.17-4.18 | 167 | 3.4-3.41 | 136 |
| 4.92-4.94 | 197 | 4.14-4.16 | 166 | 3.37-3.39 | 135 |
| 4.9-4.91 | 196 | 4.12-4.13 | 165 | 3.35-3.36 | 134 |
| 4.87-4.89 | 195 | 4.09-4.11 | 164 | 3.32-3.34 | 133 |
| 4.85-4.86 | 194 | 4.07-4.08 | 163 | 3.3-3.31 | 132 |
| 4.82-4.84 | 193 | 4.04-4.06 | 162 | 3.27-3.29 | 131 |
| 4.8-4.81 | 192 | 4.02-4.03 | 161 | 3.25-3.26 | 130 |
| 4.77-4.79 | 191 | 3.99-4.01 | 160 | 3.22-3.24 | 129 |
| 4.75-4.76 | 190 | 3.97-3.98 | 159 | 3.2-3.21 | 128 |
| 4.72-4.74 | 189 | 3.94-3.96 | 158 | 3.17-3.19 | 127 |
| 4.7-4.71 | 188 | 3.92-3.93 | 157 | 3.15-3.16 | 126 |
| 4.67-4.69 | 187 | 3.89-3.91 | 156 | 3.12-3.14 | 125 |
| 4.65-4.66 | 186 | 3.87-3.88 | 155 | 3.1-3.11 | 124 |
| 4.62-4.64 | 185 | 3.84-3.86 | 154 | 3.07-3.09 | 123 |
| 4.6-4.61 | 184 | 3.82-3.83 | 153 | 3.05-3.06 | 122 |
| 4.57-4.59 | 183 | 3.79-3.81 | 152 | 3.02-3.04 | 121 |
| 4.54-4.56 | 182 | 3.77-3.78 | 151 | 3-3.01 | 120 |
| 4.52-4.53 | 181 | 3.74-3.76 | 150 | **Less than 3** | **Not enough** |
| 4.5-4.51 | 180 | 3.72-3.73 | 149 |  |  |
| 4.47-4.49 | 179 | 3.7-3.71 | 148 |
| 4.45-4.46 | 178 | 3.67-3.69 | 147 |  |  |
| 4.42-4.44 | 177 | 3.65-3.66 | 146 |  |
| 4.4-4.41 | 176 | 3.62-3.64 | 145 |  |  |
| 4.37-4.39 | 175 | 3.6-3.61 | 144 |  |  |
| 4.35-4.36 | 174 | 3.57-3.59 | 143 |  |  |
| 4.32-4.34 | 173 | 3.55-3.56 | 142 |  |  |
| 4.3-4.31 | 172 | 3.52-3.54 | 141 |  |  |
| 4.27-4.29 | 171 | 3.5-3.51 | 140 |  |  |
| 4.24-4.26 | 170 | 3.47-3.49 | 139 |  |  |

***Assessment of individual student tasks***

***Individual tasks of the student****(further -****ISS****)*are estimated in points of ECTS (no more than **10**) which are added to the sum of points gained for current educational activity. Points for individual tasks are accrued to the student once only on a commission basis (commission - head of the department, head teacher, group teacher) only if they are successfully completed and defended. In any case, the total amount of ball matches on HDPE have not can not exceed 2 0 0 points .

***Assessment of students' independent work***

Learning topics submitted to independent work is checked during workshops and offset .

***With alik***

The test is given to students who have met all the requirements of the curriculum and do not have missed classes .

***Grade from the discipline***

The grade in the discipline is equal to the grade of current activity and is expressed on the traditional two-point scale: "credited" or "not credited". The maximum number of points that a student can get the study subjects **-**200 points of inimalna number of points that must collect for current educational activity is 120.

**Methodical support**

Program training courses ;

Plans for practical classes and independent work of students;

Methodical developments for the teacher;

Methodical instructions for practical classes for students;

Methodical materials that provide independent work of students;

Test and control tasks for practical classes;

Questions and tasks to control the assimilation of the section;

List of questions before the test, tasks to test practical skills during the test.

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