**Ministry of Health of Ukraine**

**Kharkiv National Medical University**

**III Medical Faculty**

**Department of Pediatrics №1 and Neonatology**

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

 **level of higher education training 22 "Healthсare"**

**in specialty 222 "Medicine"**

**Syllabus for**

**METHODS OF FUNCTIONAL DIAGNOSTICS IN PAEDIATRIC PRACTICE**

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| The syllabus of the discipline was approved at the meeting of the Department of Pediatric #1 and Neonatology  Protocol from“\_\_\_” \_\_\_\_\_\_\_\_ 2020 № \_\_\_\_Head of Department\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ prof. Gonchar MO (signature) (surname and initials)“\_\_\_” \_\_\_\_\_\_\_\_ 2020  **Kharkiv – 2020** |  | Approved by the methodical commission of KhNMU on problems of professional training pediatric profile Protocol from“\_\_\_\_\_” \_\_\_\_\_\_\_\_\_ 20 \_\_\_\_\_ №Chairman of the methodical commission of KhNMU on problems of professional training pediatric profile\_\_\_\_\_\_\_\_\_\_\_\_ prof. Gonchar MO (signature) (surname and initials)“\_\_\_” \_\_\_\_\_\_\_\_ 2020  |

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Teacher information:

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**Direct consultations****:** time and location according to department schedule.

**On-line consultations**: Moodle, Zoom, Google Meet (schedule and location by prior agreement with a lecturer)

**Location****:** Municipal Non-profit Organization of the Kharkiv Regional Council “Regional Clinical Children Hospital

**General information**

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| Name of indicators  | Field of knowledge, direction of training, educational and qualification level  | Characteristics of the discipline |
| Full-time studies |
| Number of credits - 3 | Educational program for training specialists of the second (master's) level of higher education training 22 "Healthсare"in specialty 222 "Medicine" | Normative |
| Number of hours– 90 | speciality:222 «Medicine» | **Year of study:** |
| 6th |
| **Semester** |
| XI, XII  |
| **Lectures** |
| Hours for full-time education form of study:classrooms - 30independent student work - 60 |  Education level:Specialist of the second (master's) level | 0 h. |
| **Practical, seminars** |
| 30 h. |
| **Laboratory** |
| 0 h. |
| **Independent work** |
| 60h. |
| **Individual tasks:**  |
| Type of control: credit |

Educational program of higher education of Ukraine, second (master's) level, educational qualification, assigned - master's degree, field of knowledge - 22 Healthcare, specialty 222 "Medicine is based on the Law of Ukraine "« Pro vyshchu osvitu (About higher education)» and the resolution of the Cabinet of Ministers of Ukraine 01.02.2017 № 53 «Pro vnesennya zmin do postanov y Kabinetu Ministriv Ukrayiny (On Amendments to the Resolution of the Cabinet of Ministers of Ukraine) 29.04.2015 р. № 266» ", in accordance with the order of the Ministry of Education and Science of Ukraine dated 01.06.2016 № 600 «Pro zatverdzhennya ta vvedennya v diyu Metodychnykh rekomendatsiy shchodo rozroblennya standartiv vyshchoyi osvity (On approval and introduction of methodological recommendations for the development of higher education standards)».

The program of the course determines the prerequisites for accessing objective of the program, amount of ECTS credits, a list of general and special (professional) competencies, mandatory and variable content of the discipline, learning results and quality control of the study.

The course is open for qualified students of any race, nationality, ethnicity, gender, age, religion, sexual orientation, veteran status or marital status, with any privileges and people with special needs.

Links to video annotation of the discipline (granting), etc.

The page of discipline in the system Moodle (granting)

**Objective:** to provide training for highly qualified specialists in pediatrics, able to solve complex problems of functional diagnostics of childhood diseases.

of the educational and professional program "Medicine" of the second level of higher education, specialty 222 Medicine:

• Integrated competencies:

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 complex and uncertain conditions and requirements.

• General competencies:

ability for abstract thinking, analysis and synthesis, ability to learn and to be trained; the ability to apply knowledge in practical situations; knowledge and understanding of the subject area and understanding of professional activities; adaptability and action in a new situation; the ability to make informed decisions; work in a team; interpersonal interaction skills; ability to communicate effectively in certain language with using both personal skills and appropriate technology; to be certain and responsible for any activities and take into account all social aspects.

• Professional competencies in pediatrics:

Survey skills; ability to identify and evaluate alist of necessary laboratory and instrumental investigations; ability to establish a preliminary and clinical diagnosis of the disease; ability to determine the necessary regimens of work, rest and nutrition; the ability to define causes and principles of treatment of disease; ability to diagnose and provide an intensive care in emergency conditions; medical manipulation skills; the ability to plan and implement sanitary, preventive and anti-epidemic events, including infectious diseases; the ability to define tactics for the management of persons subject to dispensary supervision; ability to makemedical records.

The study of this discipline promotes development of the following soft skills:

• Communicability (implemented through: workingin groups with brainstorming during the analysis of clinical cases, presenting results of independent work to the group),

• teamwork (implemented through: workingin groups with brainstorming during the analysis of clinical cases),

• conflict management (implemented through: business games),

• time management (implemented through: self-organization during working in groups and individually),

• leadership skills (implemented through: presenting the results of individual work for the group).

**Discipline status:** the variable discipline - available for study in different forms: traditional classroom learning with elements of distance learning, which use savailable interactive information technology (ZOOM, Moodle), face-to-face and distance counseling.

**Methods of training.** Clinical (curation of children with somatic diseases), phantoms technologies, digital information (presentations, video, methodical recommendations, lectures), scientific (participation in scientific researches in the discipline), control (tests, situational tasks, assessment of practical skills defense a case history).

**Recommended literature**

1.      NelsonTextbook of Pediatrics 21th Edition. Robert M. Kliegman, JosephSt. Geme. Publisher: Elsevier. 2019. P. 4112.

2.      2015 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: The Task Force for the Management of Patients with Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death of the European Society of Cardiology (ESC) Endorsed by: Association for European Paediatric and Congenital Cardiology (AEPC) // European Heart Journal, Volume 36, Issue 41, 1 November 2015, Pages 2793–2867

3.      International recommendations for electrocardiographic interpretation in athletes. Sanjay Sharma etal. // European Heart Journal (2017) 00, 1–19

4.      Recommendations and Considerations Related to Preparticipation Screening for Cardiovascular Abnormalities in Competitive Athletes: 2007 Update [http://circ.ahajournals.org/cgi/content/full/115/12/1643](http://circ.ahajournals.org/cgi/content/full/115/12/1643%22%20%5Ct%20%22_blank)

5.      Multimodality Imaging Guidelines of Patients with Transposition of the Great   Arteries: A Report from the American Society of Echocardiography Developed in Collaboration with the Society for Cardiovascular Magnetic Resonance and the Society of Cardiovascular Computed Tomography. Meryl S. Cohenetal. // J AmSocEchocardiogr 2016;29:571-621.

6.      Clinical guidelines diagnosis and treatment manual 2016 edition Update September 2017  Електронний ресурс:  [http://refbooks.msf.org/msf\_docs/en/clinical\_guide/cg\_en.pdf](http://refbooks.msf.org/msf_docs/en/clinical_guide/cg_en.pdf%22%20%5Ct%20%22_blank)

7.      Guidelines for  the Echocardiographic Assessment of Atrial Septal Defect and Patent Foramen  Ovale: From the American Society of Echocardiography and Society for Cardiac Angiography and Interventions Електронний ресурс: [http://www.onlinejase.com/article/S0894-7317(15)00387-9/fulltex](http://www.onlinejase.com/article/S0894-7317%2815%2900387-9/fulltex%22%20%5Ct%20%22_blank)t.

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

The discipline "Methods of Functional Diagnostics in Paediatric Practice " is related to the disciplines of medical biology, normal and pathological anatomy, normal and pathological physiology, biochemistry, microbiology, propaedeutics of pediatrics, medical genetics, pharmacology and medical prescription, epidemiology and principles of evidence-based medicine, emergency care, and also have practical skills in caring for pediatric patients and their management in outpatient and inpatient settings.

**Post-requisites of the discipline.**

The main provisions of the training discipline should be applied in the study of related disciplines during the 6 year of study, is the basis for preparing for the licensed exam, preparing for study in higher education institutions at the programs of the third educational and scientific level.

**Learning outcomes.**

The course covers the main aspects of training a future pediatrician or family doctor.

According to the training program in the discipline of "Methods of Functional Diagnostics in Paediatric Practice", the applicant receives theoretical knowledge, methodological training, practical skills and abilities in the following areas:

● Functional diagnostics tests of the most common children respiratory diseases.

● Functional diagnostics tests of the most common diseases of the circulatory system.

● Functional diagnostics tests of the most common digestive diseases.

● Functional diagnostics tests of the most common diseases of the urinary system.

**Curriculum of the discipline.**

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| **METHODS OF FUNCTIONAL DIAGNOSTICS IN PAEDIATRIC PRACTICE (90 hours)** |
| **Topics for practical classes( 30 hours)** |
| 1 | Basics of Functional Echocardiography in Children and Neonates | 5 |
| 2 | Principals of ECG analysis in children with arrhythmia. | 5 |
| 3 | Stress functional tests in the pediatrics. | 5 |
| 4 | Ambulatory Electrocardiogram Monitoring. | 5 |
| 5 | 24-Hour Ambulatory Blood Pressure Monitoring.  | 5 |
| 6 | Assessment of Respiratory Function. Credit. | 5 |
| **Разом**  |  | **30** |
| **Topics for independent work(60 hours)** |
| 1 | Instrumental diagnosis of congenital heart defects in newborns and children. | 5 |
| 2 | Basic analysis of ECG in children.  | 5 |
| 3 | Medical tests in the pediatric cardiology. | 5 |
| 4 | Screening ultrasound program of abdominal organs and kidneys in newborns and children. | 5 |
| 5 | CT and MRI of the respiratory system in children. | 5 |
| 6 | Radiography methods in children with urinary tract diseases. | 5 |
| 7 | CT and MRI of the urinary systemin children. | 5 |
| 8 | Methods for assessing the condition of the gastroduodenal disease. | 5 |
| 9 | Methods for assessing the condition of the large intestine: colonoscopy, rectoromanoscopy. | 5 |
| 10 | Indications and evaluation of neurosonography in the neonatal period and early age children. | 5 |
| 11 | Indications and evaluation of electromyography in children. | 5 |
| 12 | Indications and evaluation of musculoskeletal ultrasound in children. | 5 |
| **Разом**  |  | **60** |

**The politics and values of discipline**.

 In order to successfully complete the relevant course, it is necessary to attend practical classes regularly; to have theoretical preparation for practical classes; not to be late and not to miss classes; perform all necessary tasks and work actively during each lesson; be able to work in a group; contact the curators of the course on various issues on the subject of classes and receive it when you need it.

 Students can discuss different tasks, but their performance is strictly individual. You are not allowed to write off, use any kind of software, tips, use a mobile phone, tablet or other electronic gadgets during classes for purposes other than the learning process. Students are not allowed to be late for practical classes.

 Visiting patients during the curation in the hospital is possible, provided that students have the appropriate uniform, a health book with a note about the timely medical examination.

 Students with special needs can meet with the teacher or warn him before the start of classes, it can be done by the head of the group on the students request. If you have any questions, please contact the teacher.

 Students' participation in research and conferences on this topic is encouraged. All students of KhNMU are protected by the Regulations on prevention and settlement of Cases Related to Sexual Harassment and Discrimination at Kharkiv National Medical University, designed to determine an effective mechanism for resolving conflict situations related to discrimination and sexual harassment. on the basis of the following regulations of Ukraine: Constitution of Ukraine; Law of Ukraine "On Education"; Law of Ukraine "On Higher Education"; Law of Ukraine "On Principles of Prevention and Counteraction of Discrimination in Ukraine"; Law of Ukraine "On Ensuring Equal Rights and Opportunities for Women and Men"; Convention for the Protection of Human Rights and Fundamental Freedoms; Convention for the Suppression of Discrimination in Education; Convention on the Elimination of All Forms of Discrimination against Women; General Recommendation № 25 to Article 4, paragraph 1, of the Convention on the Elimination of All Forms of Discrimination against Women, General Comment № 16 (2005) "Equal rights for men and women to use economic, social and cultural rights" (Article 3 of the International Covenant on Economic, Social and Cultural Rights; Committee on Economic, Social and Cultural Rights of the United Nations); education in the spirit of respect for human rights and fundamental freedoms (UNESCO), the Concept of the State Social Program for Equal Rights and Opportunities for Women and Men until 2021. Kharkiv National Medical University ensures education and work, that is free from discrimination, sexual harassment, intimidation or exploitation. The University admits the importance of confidentiality. All persons, responsible for the implementation of this policy, (staff of deans' offices, faculties, institutes and the Center of Gender Education, members of the student government and ethics committee, vice-rector for research and teaching) are confidential, regarding those, who report or accuse of discrimination. or sexual harassment (except where the law requires disclosure and / or when disclosure by the University is necessary to protect the safety of others).

 KhNMU creates a space of equal opportunities, free from discrimination of any national, racial or ethnic origin, sex, age, disability, religion, sexual orientation, gender, or marital status. All rights, privileges, programs and activities, granted to students or staff of the University, apply to anybody, without exception, in case they are properly qualified. The anti-discrimination policy and the policy of counteracting sexual harassment of KhNMU are confirmed by the Codex of Corporate Ethics and the Charter of KhNMU.

The rules of behavior in University and on classes

It is important for students to follow the rules of good behavior at the university. These rules are common to all, they also apply to all teachers and staff and are not fundamentally different from the generally accepted 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;

- take an active part in the class

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;

- to 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 Pediatric №1 and Neonatology do not tolerate any form of the plagiarism. Students are expected to constantly raise their awareness on the academic writing. The first lessons will provide information on what to consider plagiarism and how to properly conduct research and scientific research.

**The procedure of informing about changes in the syllabus**: the necessary changes in the syllabus are approved at the methodological commission of KhNMU on the problems of professional training of the pediatric profile and are published on the website of Kharkiv National Medical University, the website of the Department of Pediatrics No. 1 and Neonatology of KhNMU.

**Policy of learning activities assessment**

**Assessment of current learning activities (CLA).**Teachers make sure that every student received the necessary competence in the [province](https://www.multitran.com/m.exe?s=province&l1=1&l2=2) included in the topics of practical classes. Assimilation of the topic (current control) is controlled in a practical lesson according to the specific goals. The following tools are used to assess the level of preparation of students: tests, solving situational problems, interpretation and evaluation of laboratory tests, methods of prescribing therapy, monitoring the acquisition of practical skills.

When assessing the mastery of each topic of the discipline the student is graded according to the traditional 4-point system: "excellent", "good", "satisfactory" or "unsatisfactory".

**Assessment of the discipline.** The final lesson (FL) is conducted in accordance with the program of academic discipline during the semester on schedule, during classes. Assessment of the discipline is given to the student at the last (final) lesson. The final score for the current learning activity (CLA) and the final lesson (FL) is defined as the arithmetic mean of the traditional grades for each class and FL, rounded to 2 decimal places and listed in a multi-point scale according to the standard table 1 and «Instructions of assessment of current student’s learning activities» or recalculation average grades of CLA into score according to the ECTC, which teacher can get automatically using electronic journal of [Automated Control System](https://www.multitran.com/m.exe?s=automated+control+system&l1=1&l2=2) (ACS).Student should get minimum - 120 points, maximum - 200 points during the current learning activities.

**Assessment of students' independent work**

Assimilation of topics that are submitted only for independent work is checked during the current learning activities of topic on conformable classes.

**Assessment of individual student tasks (encouragement)** is carried out under the conditions of the teacher's tasks (report of the abstract in a practical lesson, report with a presentation in a practical lesson, report at scientific and practical conferences of the department, university, writing abstracts, articles, participation in the All-Ukrainian оlympiads). Points (not more than 10) are added as incentive additional points to the final score for current learning activities. The total amount of points for the current educational activity may not exceed 200 points.

Student should get minimum - 120 points, maximum - 200 points during the current learning activities.

After graduating from the discipline the student receives a credit.

**Recalculation of the average grade for the current activity into a multi-point scale**

Assessment of current learning activities (CLA).Recalculation of the average grade for current activities in a multi-point scale is carried according to the«Instructions of assessment of current student’s learning activities».

Assessment of the discipline.The final score for the current learning activity (CLA) and the final lesson (FL) is defined as the arithmetic mean of the traditional grades for each class and FL, rounded to 2 decimal places and listed in a multi-point scale according to the standard table 1.

Assessment of individual student tasks is carried out by the teacher: the abstract report at the practical lesson 0-2 points; report with presentation at the practical lesson 0-3 points, report at scientific and practical conferences of the department, university, writing theses, articles 0-5 points; participation in the All-Ukrainian оlympiads - for each activity 5 - 10 points (a total of not more than 10 points), which can be added as supplementary encouraging points to the final score for current learning activities, calculated using Table 2 and are part of the assessment of the discipline.

Table 1

**Recalculation of the average grade for the current activity into a multi-point scale**

**(for disciplines completed by the 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 than3 | Insufficient |
| 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 |  |  |

Head of the Department of Pediatrics No. 1 and

neonatology, MD, PhD, Professor Gonchar M.O.