**MinistryofHealthofUkraine**

**KharkivNationalMedicalUniversity**

**III Medical Faculty**

**DepartmentofPediatrics №1 and Neonatology**

**Educationalprogramfortrainingspecialistsofthesecond (master's)**

**levelofhighereducationtraining 22 "Healthсare"**

**inspecialty 222 "Medicine"**

**Syllabus for**

**PRACTICAL ASPECTS OF PEDIATRIC CARDIOLOGY.**

**METHODS OF FUNCTIONAL DIAGNOSTICS IN CHILDREN**

|  |  |  |
| --- | --- | --- |
| 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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**Academic staff:**IrynaSanina, AlonaBoichenko, Olga Logvinova, OleksandrOnikiienko

**Information about the academic staff:**

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

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

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

**General information**

|  |  |  |
| --- | --- | --- |
| 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** |
| Hoursforfull-timeeducationformofstudy:  classrooms - 30  independentstudentwork  - 60 | Educationlevel:  Specialistofthesecond (master's) level | 0h. |
| **Practical, seminars** |
| 30h. |
| **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 vyshchuosvitu(About higher education)» and the resolution of the Cabinet of Ministers of Ukraine 01.02.2017 № 53 «Pro vnesennyazmin do postanov y KabinetuMinistrivUkrayiny (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 diyuMetodychnykhrekomendatsiyshchodorozroblennyastandartivvyshchoyiosvity (On approval and introduction of methodological recommendations for the development of higher education standards)».

Theprogram of the coursedeterminestheprerequisitesforaccessingobjectiveoftheprogram, amountof ECTS credits, a listofgeneralandspecial (professional) competencies, mandatoryandvariablecontentofthe discipline, learningresultsandquality controlofthe 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 of highly qualified specialists in the field of pediatrics, namely in pediatric endocrinology, who are able to solve complex problems of diagnosis and treatment of children with endocrine problems

**The main objectives** of the course are the acquisition general and professional competencies 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).

**Disciplinestatus:** thevariablediscipline- available for study in different forms: traditional classroom learning with elements of distance learning, which use savailableinteractivein formation 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. NelsonTextbookofPediatrics 21th Edition. Robert M. Kliegman, JosephSt. Geme. Publisher: Elsevier. 2019. P. 4112.
2. Pediatrics : textbook / O. V. Tiazhka [etal.] ; ed. O. Tiazhka. - 2nd ed., reprint. NovaKnyha, 2016.
3. 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
4. 3.      International recommendations for electrocardiographic interpretation in athletes. Sanjay Sharma etal. // European Heart Journal (2017) 00, 1–19
5. 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>
6. 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.
7. 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>
8. 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>t.

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

The discipline "Practical aspects of pediatric cardiology. Methods of functional diagnostics in children " 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-requisitesofthediscipline.**

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.** This course is focused on the main problems of pediatric cardiology and functional tests. The program covers selected topics related to cardiovascular disorders of children of different ages. Clinical experience can be obtained during practical lessons of the course at the specialized cardiology center in the “Regional Clinical Children Hospital”, according to the schedule of classes. Students can participate in consultation of children with relevant cardiovascular problems(or study case histories if patients are not available) with the focus on the modern diagnostic technologies and treatment. This course covers both practical and theoretical aspects of problems that important for the preparation offamily doctor (GP),pediatricianor neonatologist.

**Curriculum of the discipline.**

|  |  |  |
| --- | --- | --- |
| **Course DEVELPMENTAL ENDOCRINOLOGY (90 hours = 3 credits)** | | |
| **Practical Classes ( 30 hours)** | | |
| 1 | Critical congenital heart disease in newborns. Duct-dependent congenital heart disease. Modern approaches to diagnosis and monitoring of complications. Pulmonary hypertension. Persistent fetal circulation. | 5 |
| 2 | Cardiomyopathies in childhood: features of manifestation and clinical presentation, early diagnosis at the preclinical stage in relatives (according to ESC working group on myocardial and pericardial diseases). Heart failure | 5 |
| 3 | Bradyarrhythmias and tachyarrhythmias in childhood: etiology, features and treatment. | 5 |
| 4 | Syncope in children and adolescents. Sudden cardiac death. | 5 |
| 5 | Echocardiography in pediatrics and neonatology: scanning modalities and interpretation of results. | 5 |
| 6 | The value of electrocardiography in the practice of pediatricians and family physicians. ECG analysis in normal and in pathology. The main stages of ECG analysis in children of different ages with arrhythmias and conduction. | 5 |
| **Total** |  | **30** |
| **Topics for independent work(60 hours)** | | |
| 1 | Diagnosis and monitoring of cardiovascular disorders in newborns. Etiology and pathophysiology of secondary cardiomyopathy in young children. | 5 |
| 2 | Anatomical and physiological features of the cardiovascular system in newborns and infants. The concept of hemodynamic adaptation of newborns in the early neonatal period. | 5 |
| 3 | Modern approaches to the management of children with congenital heart disease in the pre- and postoperative period. Features of heart failure in children with congenital heart disease. Vaccination strategy. | 5 |
| 4 | Cardiology in young athletes. Athlete’s heart, differential diagnosis and observation. | 5 |
| 5 | Cardiovascular disorders in children with metabolic diseases. | 5 |
| 6 | Autonomic imbalance in children and correction options. | 5 |
| 7 | Acute coronary syndrome in childhood. | 5 |
| 8 | Rare diseases and syndromes in pediatric cardiology. | 5 |
| 9 | Pharmacological tests in the pediatric practice. Purpose and method of conducting, evaluation of the sample, indications and contraindications. | 5 |
| 10 | Stress tests in the pediatric practice. Purpose and methods, evaluation of the sample, indications and contraindications. | 5 |
| 11 | Ambulatory blood pressure monitoring (ABPM). Principles of operation of the device and basic blood pressure monitoring systems. Methods of conducting, indications, conclusion. | 5 |
| 12 | Daily ECG monitoring. Principles of operation of the device and basic Holter monitoring systems. Research methodology. Patient's diary. Indication. | 5 |
| **Total** |  | **60** |

**The politics and values of discipline**.

In order to successfully complete the relevant course, it is necessary to attend practical classesregularly; 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 theplagiarism. 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 learningactivities 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 thediscipline 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 supplementaryencouraging 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.