

National Pirogov Memorial Medical University, Vinnytsya

"APPROVE"

Vice-Rector of higher education
institution for Research, Education and
Teaching professor of HEI
Oksana SEREBRENNIKOVA

“ 31 ” 08 2022 year

"AGREED"

Head of department of Pediatric №2
professor of HEI Veronika DUDNYK

“ 31 ” 08 2022 year

SYLLABUS

OF ACADEMIC DISCIPLINE (selective course)

Selected questions of Pediatric Cardiology

Specialty	222 Medicine
Educational level	the second (master`s) level
Educational programme	EPF Medicine, 2022
Academic year	2022-2023
Department	Pediatric №2
Contact information	<i>pediatric2@vnmnu.edu.ua</i> , 108, Khmelnytske shosse, Vinnytsya, 21029 Communal Nonprofit Enterprise “Vinnytsia Regional Children’s Clinical Hospital of Vinnytsia Regional Council”, Tel (0432)560819
Syllabus compiler	Assistant professor, PhD Zborovska Olha

1. Status and structure of the discipline

Discipline status	Elective
Discipline code in EPP/discipline place in EPP	SC 5.16, professional training discipline
Course / semester	<i>5th year (IX-X semesters)</i>
The amount of discipline (the total number of hours / number of credits ECTS)	60 hours, 2 credits ECTS
Number of content modules	1
The structure of the discipline	Practical classes 10 hours. Lectures – 20 hours. Independent work 30 hours. In general: auditoria classes – 50%, independent work – 50%
Language of study	English
Form of study	Full-time (or remote full-time by order)

2. Description of the discipline

Short annotation of the course relevance. The subject direction of discipline is to obtain knowledge of selective discipline of professional training and study of pediatric cardiology issues that were not included in the program of discipline "Pediatrics", improvement and assimilation of practical skills, will acquire professional level of readiness of future doctors to independent work and timely detection of cardiological pathology in children's contingent.

According to modern statistical data, the pathology of the cardiovascular system in children is a sufficiently common medical problem in the practice of a doctor. In particular, congenital heart failures are the most common anomaly among all congenital developmental defects with a frequency of 20-25%. Each third teenager with hypertension may have hypertensive disease in adulthood under untimely detected and inappropriate curations of disease from childhood. A number of cardiological problems are the cause of sudden death syndrome that can be warned with timely diagnosis.

In this regard, pedagogical activity should be directed primarily to assist students for the active use of previously received theoretical knowledge of pediatrics and, in particular cardiological aspects in clinical practice, replenishment of new knowledge, especially in relation to modern methods of diagnosis, treatment and prevention of cardiological diseases in children.

Prerequisites. To successfully mastering of the discipline students need to use knowledge gained in the process of studying the following disciplines of general training:

- anatomy, normal and pathological physiology, which give the concept of structure and physiology of the cardiovascular system in children.
- clinical pharmacology is studying the mechanism of action and side effects, the peculiarities of use, interaction of medicinal products, which gives an opportunity to prescribe adequate therapy with different cardiovascular diseases of childhood.
- the propedeutic of internal and children's diseases teaches a student to collect anamnesis, practical skills of an objective examination of the patient and the ability to interpret the results of additional research methods.

The purpose of the course and its significance for professional activities: deepening of theoretical knowledge of students through the study of the pathology of the cardiovascular system in children who were not included in the program of discipline "Pediatrics", improvement and assimilation of practical skills, acquiring professional level of readiness of future doctors to independent work and timely detection of cardiological pathology in children's contingent.

Postrequisites. In the course of studying the discipline acquires the knowledge necessary for the successful assimilation of disciplines of vocational training, namely: pediatrics, internal diseases, and other clinical disciplines, which involves the integration of teaching with these disciplines and the use of knowledge, skills and skills in the process of further education and professional. the activity. Students master skills in relation to differential diagnostics of syndromes that are inherent in the pathology of the cardiovascular system in children, study the doctor's tactics until highly specialized cardiology.

3. Learning outcomes.

After successful study of the discipline the applicant will be able to:

1. Conduct an analysis of the information received, to make substantiated decisions, to acquire modern knowledge on the pathology of the cardiovascular system in children.
2. Collect data on the patient's complaints, anamnesis of illness, anamnesis of life, conduct a physicist examination of a patient with an emphasis on the detection of cardiovascular pathology in children.
3. To allocate a leading clinical symptom or syndrome.
4. To establish the most probable or syndrome diagnosis of the disease.
5. Assign a laboratory and / or instrumental research by matching with standards.
6. To implement a differential diagnosis of cardiovascular diseases in children using the most likely or syndrome diagnosis, lab and patient's instrumental examination.
7. To establish a preliminary clinical diagnosis of cardiovascular disease, making a reasonable solution and logical analysis.
8. Identify the necessary therapeutic tactics of the most common diseases of the cardiovascular system in children, to provide emergency care.
9. Register standard ECG, interpret the main syndromes.

4. Content and logistic of the discipline

Module 1 «Selected questions of Pediatric Cardiology»	9 or 10 semester 60 hours/2 credit	Practical classes № 1-5
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Discipline include 5 topics, which are the component of one module.

Lectures

1. ECG interpretation algorithm: from ECG waves and intervals to clinical syndrome. Part I.
2. ECG interpretation algorithm: from ECG waves and intervals to clinical syndrome. Part II.
3. Methods of clinical examination of a child: focus on identifying the pathology of the cardiovascular system.
4. Congenital heart defects with enrichment of pulmonary circulation. Principles of hemodynamic disorders and main clinical syndromes. Tactics of a doctor at different levels of providing medical care.
5. Congenital heart defects with impoverishment of pulmonary and systemic blood circulation. Principles of hemodynamic disorders and main clinical syndromes. Tactics of a doctor at different levels of providing medical care.
6. Critical congenital heart defects. Tactics of managing such children at the stage of primary stabilization and transportation. Types of specialized medical care.
7. Myocarditis in children. Clinical manifestations, modern diagnostic methods, approaches to therapeutic tactics.
8. Infective endocarditis in children. The role of the family doctor in the prevention of infectious endocarditis.
9. Cardiological aspects of Kawasaki disease. Anomalies of the development of coronary vessels in children (ALCAPA).
10. Medical support of children with cardiovascular pathology: vaccination, physical activity.

Module 1. «Selected questions of Pediatric Cardiology»

Content module 1. Selected questions of Pediatric Cardiology

Topic 1. A child with rhythm disorders at a family doctor's appointment. Clinical cases of patients with ECG with different types of arrhythmias. Emergency care for paroxysmal tachycardia.

Topic 2. Unconscious child at an appointment with a family doctor. Clinical cases with ECG in case of conduction disorders.

Topic 3. Congenital heart defects without cyanosis. How to recognize such a patient at the appointment, modern aspects of medical support for such children.

Topic 4. Congenital heart defects with cyanosis. How to recognize such a patient at the appointment, modern aspects of medical support for such children.

Topic 5. Management of children and adolescents with arterial hypertension. Differential diagnosis of primary and secondary arterial hypertension. Emergency care for hypertensive crisis.

Practical classes include the theoretical substantiation of the main issues of the topic and assimilation of the following practical skills:

- 1) examination of patients and determination of clinical features of the main diseases of the pathology of the cardiovascular system;
- 2) interpretation of the results of laboratory, instrumental surveys;
- 3) to form algorithms for treating, rehabilitation and prevention of diseases of cardiovascular system in children;
- 4) solving situational tasks and emergency tasks with pathology of cardiovascular system in children.

In practical classes, students improve the interpretation skills of electrocardiograms, elevations of echocardiographic survey, in working notebooks solve clinically-oriented situational tasks and test tasks

The student's independent work involves preparation for practical classes and development of practical skills, study of topics for independent extracurricular work, elaboration of scientific literature. and writing reviews according to recommended topics for individual work. The control of studying the topics of independent work is carried out on the final module.

Calendar plans of practical classes, thematic plan of independent extracurricular work, volume and directions of individual work are published on the website of the department.

Route of receiving materials: Department of Pediatrics №2 / Student / Full-time / Medicine / 6th year / Educational and methodical materials.

Access to materials is provided from the student's corporate account s000XXX@vnmua.edu.ua.

5. Forms and methods of monitoring academic performance

Current control in practical studies	Methods: oral or written survey, test programmer, solving situational tasks, working out algorithms for emergency care, work with cardiograms, forms with results of additional examination methods, radiographs and evaluation of their results, control of practical skills in conducting the patient's survey. (Registration of a protocol in the working notebook)
Final control from discipline: credit	According to the Regulation of the Academic process in National Pirogov Memorial Medical University (link https://www.vnmua.edu.ua/Generalinformation/Main documents)

Learning success diagnostic tools	Theoretical questions, tests, clinically-oriented situational tasks, practical tasks, demonstration of practical skills.
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6. Assessment criteria

According to the Regulation of the Academic process in National Pirogov Memorial Medical University (link [https://www.vnmu.edu.ua/General information/Main documents](https://www.vnmu.edu.ua/General_information/Main_documents))

Continuous assessment	On a four point system of traditional assessments: 5 “excellent”, 4 “good”, 3 “satisfactory”, 2 “unsatisfactory”
Final control of the discipline - Credit	For a 200-point scale (average arithmetic estimate for the semester is converted into scores) Credited: 120 to 200 points Not credited: less than 120 points (see the evaluation scale)
Discipline assesement:	For a 200-point scale (average arithmetic estimate for the semester is converted into scores) Credited: 120 to 200 points Not credited: less than 120 points (see the evaluation scale) Individual work - from 6 to 12 points From 122 to 200 points in total.

Discipline Score Scale: National and ECTS

The sum of grades for all types of educational activities	Score ECTS	Score on a national scale	
		For exam, course project (work), practice	for credit test
180-200	A	Excellent	Credited
170-179,9	B	Good	
160-169,9	C		
141-159,9	D	Satisfactory	
122-140,99	E	Satisfactory	-
0-121,99	FX	unsatisfactory with the possibility of reassembly	is not credited with the possibility of reassembling

	F	unsatisfactory with a mandatory reexamination of discipline	is not credited with mandatory reexamination of discipline
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Criteria for student knowledge assessment

Assessment of oral written response during the current assessment

The grade **"Excellent"** is given for the work in which the student correctly answered all the questions according to the topic. The answers are deep, meaningful and specific. The student must know the classification, features of clinical manifestations, diagnostics of differential diagnostics, treatment, prevention of cardioreumatic pathology in children. The total score for discipline 180-200 points.

The grade **"Good"** is given for the work in which the student correctly answered 75% of the questions and showed a fairly substantial knowledge of those issues that reflect the main sections of the curriculum. The student must know the main clinical manifestations of cardioregematological pathology of childhood, methods of diagnosis and treatment of cardiorevatological diseases of childhood diseases and their prevention. Overall score for discipline 179-160 points.

The grade **"Satisfactory"** is given for the work in which the student correctly answered 50% of the questions. The answers are incomplete, mostly limited to a simple list of components, features, features, without the slightest detail. The student must have a mandatory minimum knowledge about theoretical and practical knowledge of children's cardiorevatology. Overall score for discipline 159-122 points.

The grade **"Unsatisfactory"** is given for work in which the student did not give any correct answer or gave only an approximate answer to two questions. The student does not have a mandatory minimum of knowledge of children's cardiorevatology. General score for discipline less than 122 points

Assessment of practical skills during the current assessment

A grade of **"Excellent"** is given to a student who knows the course and sequence of the patient's physical examination, demonstrates the correct implementation of the necessary practical skills and correctly with clear formulations of generalizations and conclusions draws up a protocol of the patient's examination.

The grade **"Good"** is given to a student who admits inaccuracies during the physical examination of the patient, but is able to identify errors and can demonstrate the implementation of practical skills in general, draws up a protocol of examination of the patient.

The grade **"Satisfactory"** is given to a student who knows the basics of the practical task, but has difficulty in conducting a physical examination of the patient, can not demonstrate the correct sequence of practical skills, can not fully interpret the results of research, sloppily draws up a protocol of examination.

A grade of **"Unsatisfactory"** is given to a student who cannot demonstrate practical skills, has significant difficulties in conducting a physical examination of

the patient, violates the procedure of practical work, does not register the progress of work in the patient's examination protocol.

Assessment of independent student work

The student's independent work is assessed during the final classes of the module of the discipline through an oral interview on topics that are not included in the plan. Evaluation of prepared messages, presentations on the selected topic is carried out by traditional evaluation

The grade **"excellent"** is given to a student who has deeply and comprehensively revealed the problem, logically stated the main issues, give examples from medical informative sources. He is able to connect the material of this topic with the previously studied sections, which indicates the ability to analyze the studied material, as well as clearly demonstrates the importance of the acquired theoretical knowledge for practical medicine.

The grade **"good"** is given to a student, who knows and is well versed in theoretical material, competently revealed the main issues of the topic and its medical significance, but did not go beyond the textbook, guidelines.

A grade of **"satisfactory"** is given to a student who has revealed the basic concepts and definitions of the recommended topic, but has not fully disclosed it, does not understand the medical aspects of the topic, relate theoretical material to practice.

A grade of **"unsatisfactory"** is given to a student who cannot demonstrate practical skills, has significant difficulties in conducting a physical examination of the patient, violates the procedure of practical work, does not register the progress of work in the patient's examination protocol.

The calculation of individual points is carried out on the basis of the Regulation of the Academic process in National Pirogov Memorial Medical University (Link [https : //www. vnmu. e du.ua/General_information](https://www.vnmu.edu.ua/General_information)).

12 points - added to the assessment of the discipline for a student who won a prize at the interuniversity competitions in the discipline or a prize at the Ukrainian competition of student research reports or a prize at an interuniversity I international scientific conference with the published work;

11 points - are added to the assessment of the discipline for a student who won the first prize at the intra-university Olympiad in the discipline.

10 points - are added to the assessment of the discipline for a student who won a prize (II-III) at the intra-university Olympiad in the discipline or at the student scientific conference with the availability of printed work; or for participation (without a prize place) in interuniversity competitions in the discipline or a prize place in an interuniversity/international scientific conference with the availability of published work

9 points - are added to the assessment of the discipline for a student who participated (without a prize) in the intra-university Olympiad in the discipline or student scientific conference with the presence of published work

8 points - are added to the assessment of the discipline for a student who actively participated in the student scientific group, published a paper with results of

scientific and practical research, but did not personally participate in the student scientific conference, prepared a poster report.

6 points - are added to the assessment of the discipline for a student who has made tables, or an educational video, thematic illustrated presentation to replenish the visual support of teaching the discipline (taking into account the volume and importance of work performed).

Assessment of the oral answer during the final control (credit)

The final control is credited if the student has mastered totally the sections of the discipline confirmed by the current assessment of each practical lesson and has attended a lecture course. To assess the final control the calculation of the arithmetic mean of traditional grade for the semester is calculated.

7. Policy of discipline / course

The student has the right to receive high-quality educational services, access to contemporary scientific and educational information, qualified tutoring during the study of discipline and mastering practical skills. The policy of department during the providing of educational services is a student-centered, based on normative documents of the Ministry of Education and the Ministry of Health of Ukraine the Statute of the university and the Procedure for the providing of Educational Services regulated by the main principles of the organization of the educational process in National Pirogov Memorial Medical University and the principles of academic integrity (link information).

Adherence to the rules of National Pirogov Memorial Medical University, safety techniques in practical classes.

Occupational safety instruction with students during labor, professional training in health care institutions is inducted by the head of the structural unit of the institution or the student's immediate supervisor. Before the beginning of practical classes in the first lesson (at the beginning of each semester) the teacher, according to the requirements of the Job description, conducts instruction on labor protection (including rules of personal hygiene, sanitary regime, danger during supervision of patients' etc'). Targeted instruction is conducted with students in the case of organization outside of educational activities (competitions, conferences, etc.).

Requirements for preparation for practical classes. The student must be prepared for a practical lesson, situational tasks for the current topic should be solved in a workbook. They should come to class on time, without delay. A student who is late more than 10 minutes for class is not allowed to be present and must rework it in the prescribed manner.

In practical classes, the student must be dressed (hat, medical mask, changeable shoes). Students in a work uniform (medical gown, who do not have a work uniform) are not allowed to study.

The student must follow safety rules during practical classes and in the hospital. When discussing theoretical issues, students should demonstrate tolerance respect for their and colleagues and the teacher.

Usage of mobile phones and other electronic devices.

The use of mobile phones and other electronic devices in the classroom is allowed only during electronic testing or surveys.

Academic integrity. when studying the discipline, the student must be guided by the Code of Academic Integrity and Corporate Ethics of National Pirogov Memorial Medical University (link: <https://www.vnmdu.edu.ua/general-information/code-of-academic-integrity>). In case of violation of the norms of academic integrity during the current and final controls student receives a grade of "2" and must work it out to his teacher in the prescribed manner within two weeks after receiving an unsatisfactory assessment).

Missed classes. Missed classes are reworked in the manner prescribed by the Regulations on the organization of the educational process in National Pirogov Memorial Medical University (link <https://www.vnmdu.edu.ua/general-information/basic-documents>) at the time specified in the schedule (published on the website of the department <https://www.vnmdu.edu.ua/departments/pediatrics> №2) to the teacher who conducts a practical lesson. To complete the missed lesson, the student must answer questions of the topic writing or orally. The procedure for admission to the discipline final control is giving by the Regulations on the organization of the educational process in National Pirogov Memorial Medical university (link <https://www.vnmdu.edu.ua/general-information/basic-documents>). Students who do not have missed practical classes and lectures and received an average traditional grade of at least "3" are allowed to pass final control.

Additional points. Individual points in the discipline that student can receive for individual work, the amount of which is posted on the website of the department in the teaching materials of the discipline and is determined by the results of his individual work according to Regulation of the Academic process in National Pirogov Memorial Medical University (link <https://www.vnmdu.edu.ua/general-information>).

Conflict resolution. In case of misunderstandings and complaints to the teacher because of the quality of educational services, knowledge assessment and other conflict situations, student should submit his / her claims to the teacher. If the issue is not resolved the student has a right to apply to the head of the department according to Complaints Consideration Procedure (<https://www.vnmdu.edu.ua/general-information/basic-documents>).

Politics in time of remote learning. Distance learning regulated by the Regulations of the elements of remote learning in National Pirogov Memorial Medical university (<https://www.vnmdu.edu.ua/general-information>). The main training platforms for studying are Microsoft Teams and Google Meets. Practical classes and lectures exercises and consultations during distance learning is published on the website of the department (<https://www.vnmdu.edu.ua/departments/pediatrics> №2) Student or <https://www.vnmdu.edu.ua/departments/pediatrics> №2 News).

Feedback from teachers is via messengers (Viber, Telegram, WhatsApp) or e-mail (at the teacher's choice) during working hours.

Educational resources. Educational and methodological website of the department Pediatrics №2/ To students).

8. Educational resources.

Educational and methodological support of the discipline is published on the website of the department (<https://www.vnmu.edu.ua/> Department of Pediatrics№2/ To students).

Recommended literature:

1. Allen Hugh D. et al. Moss & Adams Heart Disease in Infants, Children and Adolescents 9th. ed. — Wolters Kluwer, 2016. — 3438 p.
2. Anthony J. et al. (Eds.) Heart Failure in the Child and Young Adult: From Bench to Bedside. Academic Press, 2018. — 789 p.
3. Barach P., Jacobs J., Lipshultz S.E., Laussen P. (Eds.) Pediatric and Congenital Cardiac Care: Volume 1. Springer, 2015. — 508 p.
4. Barach P., Jacobs J., Lipshultz S.E., Laussen P. (Eds.) Pediatric and Congenital Cardiac Care: Volume 2. Springer, 2015. — 458 p.
5. Da Cruz E., Ivy D., Jagers J. (Eds.) Pediatric and Congenital Cardiology, Cardiac Surgery and Intensive Care. Springer, 2014. — 3511 p.
6. Nelson textbook of pediatrics, 19th ed ; edited by Robert M. Kliegman [et al]. - Elsevier Inc. (USA), 2011. - 2680 p.
7. Prater Kathleen Joan, Hubbard Joyce Ellis (eds.) Pediatric Arrhythmias and EKGs for the Health Care Provider. Springer Publishing Company, 2017. — 293 p.
8. Presentation, diagnosis, and medical management of heart failure in children: Canadian Cardiovascular Society guidelines // Canadian Journal of Cardiology. — 2013. - Vol. 29. — P. 1535-1552.
9. Christopher R. de Filippi Galectin-3 in Heart Failure – Linking Fibrosis, Remodelling and Progression / Christopher R. de Filippi, G. Michael Felker // European Cardiology. - 2010. – Vol. 6 (2). - P. 33-36.
10. Clinical Evaluation of Youth with Pediatric Acute-Onset Neuropsychiatric Syndrome (PANS): Recommendations from the 2013 PANS Consensus Conference / Kiki Chang, Jennifer Frankovich, Michael Cooperstock [et al.] // Journal of child and adolescent psychopharmacology.-2015.-№1.-P. 3-13.
11. The 2014 Canadian Cardiovascular Society Heart Failure Management Guidelines Focus Update: Anemia, Biomarkers, and Recent Therapeutic Trial Implications / Gordon W. Moe, Justin A. Ezekowitz, Eileen O'Meara [et al.] // Canadian Journal of Cardiology. - 2015. - №3. - P. 3-16.
12. ESC Guidelines for the management of grown-up congenital heart disease (new version 2010): The Task Force on the Management of Grownup Congenital Heart Disease of the European Society of Cardiology (ESC) / H. Baumgartner, P. Bonhoeffer [et al.] // European Heart Journal. – 2010. – Vol. 31 (23). – P. 2915-2957.

1) Additional literature:

1. Christopher R. de Filippi Galectin-3 in Heart Failure – Linking Fibrosis, Remodelling and Progression / Christopher R. de Filippi, G. Michael Felker // European Cardiology. - 2010. – Vol. 6 (2). - P. 33-36.
2. Clinical Evaluation of Youth with Pediatric Acute-Onset Neuropsychiatric Syndrome (PANS): Recommendations from the 2013 PANS Consensus Conference / Kiki Chang, Jennifer Frankovich, Michael Cooperstock [et al.] // Journal of child and adolescent psychopharmacology.-2015.-№1.-P. 3-13.
3. The 2014 Canadian Cardiovascular Society Heart Failure Management Guidelines Focus Update: Anemia, Biomarkers, and Recent Therapeutic Trial Implications / Gordon W. Moe, Justin A. Ezekowitz, Eileen O'Meara [et al.] // Canadian Journal of Cardiology. - 2015. - №3. - P. 3-16.

2) Electronic resources


1. Electronic address of the university site: <http://vnmue.edu.ua>
2. Electronic address of the University Library: <http://library.vnmue.edu.ua>
3. Testing center <https://www.testcentr.org.ua/uk/>
4. Ministry of Health of Ukraine <https://moz.gov.ua/>

- 3) Methodical recommendations for practical classes and ISWs, consultations (once a week in accordance with the schedule of consultations).

9. Schedule and distribution of groups by teachers published on the web page of the department ((<https://www.vnmue.edu.ua/> Department of Pediatric №2/ Student).


Syllabus on discipline "Selected questions of pediatric cardiology" discussed and approved at the meeting of the Department of Pediatrics №2 (protocol № 1, on «30» 08 2022 year

Responsible for the course


(signature)

assistant of HEI Zborovska Olha

Head of Department
of Pediatric №2


(signature)

professor of HEI Dudnyk Veronika