

## Syllabus of the discipline "Pediatrics"

*individual profile course on choice: Internal Medicine*

### 1. General information

<b>Name of the faculty</b>	Medical faculty No.2
<b>Educational program</b>	22 "Healthcare", 222 "Medicine", second level of higher education (Master's Degree), full-time education
<b>Academic year</b>	<b>2023/2024</b>
<b>Name of discipline, code (e-mail address on the website of Danylo Halytskyi LNMU)</b>	<b>EB 3.1 Pediatrics (3.1.3.1)</b>
<b>Department (name, address, telephone number, e-mail)</b>	<b>Department</b> of Pediatrics № 2, 79059, Lviv, Pylypa Orlyka str, 4, phone / fax: +38 (032) 2938250; Kaf_pediatrics_2@meduniv.lviv.ua
<b>Head of the department (contact e-mail)</b>	Prof. Lesya Vasylyivna Besh +38 (032) 2938250 lesya.besh@gmail.com
<b>Studying year</b>	6th
<b>Semester</b>	11-12
<b>Type of discipline / module</b>	an obligatory component of the educational and professional training program
<b>Teachers</b>	Sergiy Gerasymov, M.D., Ph.D., Associate Professor, +380679375951 dr.gerasimov@gmail.com Oksana Matsyura M.D., Ph.D., Associate Professor, +380973059273 omatsyura@gmail.com Dmytro Dobryansky MD, Professor dmytro_d@hotmail.com
<b>Erasmus yes/no</b>	No
<b>The person responsible for the syllabus</b>	Sergiy Gerasymov, Ph.D., Associate Professor (dr.gerasimov@gmail.com)
<b>Number of credits ECTS</b>	6.5
<b>Number of hours (lectures/ practical classes/ independent work of students)</b>	195 (0 - lectures/ 100 - practical classes/ 95 - independent work)
<b>Language of study</b>	English
<b>Information about consultations</b>	According to the schedule during the academic year
<b>Address, telephone number and work regulations of the clinical base</b>	"Lviv City Children's Clinical Hospital " tel: +38 032 2931888 "Western Ukrainian Specialized Children's Medical Center" tel: +38 032 2702207

### 2. Short annotation to the course

#### General characteristics, brief description of the course, features, benefits

The discipline of Pediatrics is an obligatory component of the educational and professional training program. 6th year students differential diagnosis of a pulmonary, cardiovascular, gastro-intestinal, hepato-biliary, nephrological disorders, lymphoproliferative conditions. The course includes clinical issues on well child visits focusing on health maintenance with timely recognition of deviations from normal development milestones and immunization programs, integrated management of childhood illnesses. Academic curriculum ends with neonatal resuscitation and differential diagnosis of coma in children. During the course students will consolidate their knowledge gained during classes at the Department of Propaedeutics of Pediatrics, improve the methodology of physical examination of a child. They master basic skills of taking anamnesis, conduct the examination, systemize the symptoms in syndromes, plan examination of a sick child, interpret laboratory and instrumental tests, carry out a differential diagnosis of the most common pediatric diseases with typical course, make preliminary clinical diagnosis, setup of therapeutic approaches, prescribe treatment with drug dosages, develop emergency medical care plans, solve clinical cases, train practical skills on mannequins and at the bed of a sick child.

### 3. The purpose and objectives of the course

1. The objective describes a relationship between the program and content of the entire educational program. The purpose of teaching the educational discipline "Pediatrics" is development of the ability to use knowledge, skills to solve typical problems in the children's health field, the use of which is foreseen by defined list of syndromes and symptoms of diseases, emergency conditions, physiological conditions, and diseases requiring special tactics of patient management; laboratory and instrumental examinations, medical manipulations.

2. Learning objectives - provides information on the main objectives of the discipline. The objectives of the course is to develop students' knowledge of principles of differential diagnosis of the most common diseases in children, backup knowledge of newborn resuscitation, observation of the child at outpatient department, integrated management of childhood illnesses, and algorithms in pediatric coma and lymphoproliferative syndromes.

As a result of studying the discipline the student should know: subject area - differential diagnosis of the most common diseases in children, backup knowledge of newborn resuscitation, observation of the child at outpatient department, integrated management of childhood illnesses, and algorithms in pediatric coma and lymphoproliferative syndromes, understand the subject area and professional responsibility.

As a result of studying the discipline of "pediatrics" the student should be able to:

- Collect and analyze patient complaint data, medical history, life history according to according to established algorithms and evaluate the results of physical examination in the most common diseases of young and older children (SC1; PLR5) (SC - Special Competency, PLR - Program Learning Results)
- Identify the principal clinical symptom or syndrome for differential diagnosis. Make the preliminary and clinical and differential diagnosis (SC3; PLR4);
- Make the plan of investigation (laboratory, instrumental) of a sick child, interpret their results (SC2; PLR2);
- Develop management in metabolic and lymphoproliferative syndromes. (SC4; PLR5)
- Assign the appropriate therapeutic nutrition in the treatment of intestinal, hepatic, pancreatic and nephrological pathology (SC5; PLR10)
- Determine the principles of treatment (SC6; PLR14)
- Define the tactics of emergency medical care based on the diagnosis of emergency of the most common diseases of children (SC7; PLR14)
- Provide emergency medical care based on an emergency diagnosis (SC7; PLR14)
- Perform medical manipulations (SC10)
- Implement a complex of anti-epidemic and preventive measures within the primary health care. (SC13; PLR29)

The student should have the ability to:

- Abstract thinking (GC 1)
- Learn and master current knowledge (GC 2)
- Apply knowledge in practical situations (GC 3)
- Adapt and act in a new situation (GC 5)
- Make a substantiated decision (GC 6)
- Communicate in the English language (both verbal and in writing) (GC 9)

The student should demonstrate:

- Certainty and perseverance on the tasks and responsibilities (GC 12)
- Awareness of equal opportunities and gender issues (GC 13)
- Ability to act as a social entity to realize values of free democracy and for sustainable development (GC14)

The student should have the skills:

- Ability to search, process and analyze information from various sources (GC11)

3. Competences and learning results, the formation of which is facilitated by studying of the discipline (general and special competencies):

According to the standard of higher education, discipline provides students with *competences*:

Integral competence - an ability to solve complex problems in the field of professional medical activity, conduct original research and carry out research and innovative activity in the field of health care based on the

deep rethinking of the existing and creation of a new holistic theoretical or practical knowledge and/or professional practice.

**General:**

- GC1 The ability to abstract thinking, analysis, and synthesis
- GC2 Ability to learn and master modern knowledge
- GC3 Ability to apply knowledge in practical situations
- GC4 Knowledge and understanding of subject area and understanding of professional activity
- GC5 The ability to adapt and act in a new situation
- GC6 Ability to make an appropriate decision
- GC7 Ability to work in a team
- GC8 Interpersonal skills interaction
- GC9 Ability to communicate in foreign language
- GC10 Skills in using information and communication technologies
- GC11 Ability to search, process and analyze information from various sources
- GC12 Certainty and perseverance on the tasks and responsibilities
- GC13 Awareness of equal opportunities and gender issues
- GC14 The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights
- GC15 Ability to retain and develop moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology, use various types of physical activities for recreation and a healthy lifestyle

**Special (Professional):**

- SC1 Ability to collect medical information about the patient and analyze clinical data
- SC2 Ability to determine the required list of laboratory and instrumental studies and assess their results.
- SC3 The ability to establish preliminary and clinical diagnosis
- SC5 Ability to prescribe an appropriate diet in treatment and prevention of diseases
- SC6 Ability to determine the principles and type of treatment and prevention of diseases
- SC7 The ability to diagnose emergency conditions
- SC8 Ability to determine the tactics and implement emergency medical care
- SC10 The skills of performing medical manipulations
- SC11 Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information taking into account aspects of social and ethical responsibility
- SC13 Ability to carry out sanitary and hygienic and preventive measures
- SC14 Ability to plan and carry out preventive and anti-epidemic measures for infectious diseases
- SC16 Ability to keep medical records, including electronic forms
- SC21 Clearly and unambiguously to convey own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying
- SC24 Adherence to ethical principles when working with patients
- SC25 Adherence to professional and academic integrity, be responsible for the accuracy of scientific results

**4. Prerequisites of the course**

Information on the disciplines, basic knowledge and learning results required for successful study and acquisition of competencies in this discipline is indicated.

- Medical Biology
- Medical informatics

- Normal and Pathological Anatomy
- Normal and Pathological Physiology
- Histology, Cytology and Embryology
- Biological and bioorganic chemistry
- Microbiology, virology, and immunology
- Pharmacology
- Hygiene and Ecology
- Propaedeutic Pediatrics
- Nursing practice
- Radiology

## **5. Program learning results (PLR)**

PLR 1. Have a thorough knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, ability to further professional training with a high level of autonomy.

PLR 2. Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient to solve professional problems in the field of health care.

PLR 3. Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for research, critical understanding of problems in the field of medicine and related interdisciplinary problems.

PLR 4. Identify and identify the leading clinical symptoms and syndromes; according to standard methods, using preliminary data of the patient's anamnesis, data of the patient's examination, knowledge about the person, his organs and systems, to establish a preliminary clinical diagnosis of the disease.

PLR 5. Collect complaints, life history and disease, assess the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies to assess information about the diagnosis, taking into account the patient's age.

PLR 6. Establish a final clinical diagnosis by making an informed decision and analysis of the obtained subjective and objective data of clinical, additional examination, differential diagnosis, adhering to the relevant ethical and legal norms, under the supervision of a physician-manager in a health care institution.

PLR 7. Order and analyze additional (mandatory and optional) examination methods (laboratory, functional and / or instrumental) for differential diagnosis of diseases.

PLR 9. To determine the nature and principles of treatment of patients (conservative, operative), taking into account the age of the patient, in a health care facility, outside it and at the stages of medical evacuation, including in the field, on the basis of a preliminary clinical diagnosis, adhering to the relevant ethical and legal norms, by making an informed decision on existing algorithms and standard schemes. If necessary to expand the standard scheme and justify personalized recommendations under the supervision of a physician.

PLR 10. To determine the necessary mode of work, rest and nutrition based on the final clinical diagnosis, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

PLR 12. Assess the general condition of the newborn child by making an informed decision according to existing algorithms and standard schemes, adhering to the relevant ethical and legal norms.

PLR 13. Assess and monitor the child's development, provide recommendations for breastfeeding and nutrition depending on age, organize preventive vaccinations on the calendar.

PLR 14. Define tactics and provide emergency medical care in emergencies for a limited time in accordance with existing clinical protocols and treatment standards.

PLR 17. Perform medical manipulations in a medical institution, at home or at work based on a previous clinical diagnosis and / or indicators of the patient's condition by making an informed decision, adhering to the relevant ethical and legal norms.

PLR 18. Evaluate the state of functioning and restrictions of life of the person and the duration of disability with the registration of relevant documents at health care institution on the basis of data on illness and its course, features of human professional activity, etc. Keep a medical document on the patient and a certain contingent of the population on the basis of regulatory documents.

PLR 20. Analyze the epidemiological condition and take measures of mass and individual, general and local prevention of infectious diseases.

PLR 21. Search for the necessary information in the professional literature and databases of other sources,

analyze, evaluate and apply this information.

PLR 24. Organize the necessary level of individual safety (own and care persons) in the event of typical dangerous situations in the individual field of activity.

PLR 25. Clearly and unambiguously communicate knowledge, conclusions and arguments on health issues and related issues to professionals and non-specialists.

PLR 29. Plan, organize and conduct activities for the specific prevention of infectious diseases, including in accordance with the National Calendar of preventive vaccinations, both mandatory and recommended.

Manage vaccine residues; organize additional vaccination campaigns, including immune-prophylaxis measures.

### 6.0 List of learning results

Learning results code	The scope of the learning results	Reference to the code of the competence matrix
<p>The code is created when the syllabus is filling (category:  <b>Kn</b> - Knowledge,  <b>Sk</b>- Skill,  <b>C</b>-Competence,  <b>AR</b> - Autonomy and Responsibility</p>	<p>Learning outcomes determine what the student must know, understand and be able to perform, after completing the discipline in accordance with the learning objectives.            To enroll in the discipline, it is necessary to confirm the achievement of each learning result.</p>	<p>The symbol of the code of the program learning results in the Standard of Higher Education</p>
<p><b>Kn-1</b>  <b>Sk- 1</b>  <b>C-1</b>  <b>AR -1</b></p>	<p>Have a knowledge of the structure of professional activity.            Be able to carry out professional activities that require updating and integration of knowledge.            To be responsible for professional development, ability to further professional training with a high level of autonomy.</p>	<p><b>PLR1</b></p>
<p><b>Kn- 2</b>  <b>Sk- 2</b>  <b>C-2</b>  <b>AR -2</b></p>	<p>Have knowledge in pharmacology, biochemistry, physiology, pathology, microbiology, pediatric nursing, pediatric propedeutics            Be able to make systematic physical examination            Be able to make preliminary and differential diagnosis            Be responsible for provision of quality standard care in pediatric diseases</p>	<p><b>PLR2</b></p>
<p><b>Kn- 3</b>  <b>Sk- 3</b>  <b>C-3</b>  <b>AR -3</b></p>	<p>Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for research, critical understanding of problems in the field of medicine and related interdisciplinary problems.            Be able to apply current scientific advances in medical practice</p>	<p><b>PLR3</b></p>
<p><b>Kn- 4</b>  <b>Sk- 4</b>  <b>C-4</b>  <b>AR -4</b></p>	<p>Know the diagnostic algorithms for diseases; algorithms for discrimination of major symptoms or syndromes; make preliminary and final diagnoses; methods            Be able to make relevant decisions, highlighting of the main clinical symptom or syndrome; be able to make the preliminary and final clinical diagnosis            According to the normative documents fill in medical documentation of the patient (outpatient / inpatient records, etc.)            According to the ethical and legal norms, be responsible for making reasonable decisions and actions concerning of the preliminary and final clinical diagnosis accuracy</p>	<p><b>PLR4</b></p>

<b>Kn-5</b>	Demonstrate knowledge about child's body, anatomical and physiological peculiarities of child's organs and systems at different ages, know the standard methods of interview, able to compile a pedigree, perform physical examination, know stages and methods of examination of psychomotor and physical development of the child.	<b>PLR5</b>
<b>Sk-5</b>	To be able to talk to a child-and/or her parents (guardians), based on algorithms and standards. Use the principles of communication with the parents of children. Using standard techniques to carry out physical examination of a patient. Be able to examine psychomotor and physical development of the child. Able to assess the quality of care and feeding of infants and nutrition of children. Be able to conduct a comprehensive assessment of child health.	
<b>C-5</b>	Communicate effectively with patient and/or his parents (care givers). Transfer information about the child health to the relevant medical documentation.	
<b>AR-5</b>	Be responsible for qualitative collection of information obtained during conversation with patient, survey, examination, palpation, percussion of organs and systems, timely assessment of the child's health condition, psychomotor and physical development of the child and for taking appropriate measures.	
<b>Kn-6</b> <b>Sk-6</b> <b>C-6</b> <b>AR-6</b>	Know similar and different features of major pediatric diseases Establish a final clinical diagnosis by making an informed decision and analysis of the obtained subjective and objective data of clinical, additional examination, differential diagnosis, adhering to the relevant ethical and legal norms, under the supervision of a mentor physician in a health care institution.	<b>PLR6</b>
<b>Kn-7</b> <b>Sk- 7</b> <b>C-7</b> <b>AR -7</b>	Know the standard methods of laboratory and instrumental research. Be able to assign an appropriate laboratory and instrumental examination of the patient by applying standard techniques, analyze the results of examination (laboratory and instrumental) and make preliminary diagnosis Create a list and inform the patient and/or his/her parents (care givers), experts about conclusions concerning the necessary list of laboratory and instrumental tests Be responsible for the decision concerning the evaluation of laboratory and instrumental examinations results	<b>PLR7</b>
<b>Kn-9</b> <b>Sk- 9</b> <b>C-9</b> <b>AR -9</b>	Know the nature and principles of treatment of patients (conservative, operative), taking into account the age of the patient, in a health care facility, outside it and at the stages of medical evacuation, including in the field, on the basis of a preliminary clinical diagnosis, adhering to the relevant ethical and legal norms, by making an informed decision on existing algorithms and standard schemes. Be able to expand the standard scheme and justify personalized recommendations under the supervision of a physician.	<b>PLR9</b>
<b>Kn – 10</b> <b>Sk - 10</b>	Know the system of hygienic and preventive measures among the population observed. Know the principles of organization of follow-up of different groups of population, who are subject to supervision (newborns, children, teenagers). Be able to setup groups of children for follow-up. Be able to plan	<b>PLR10</b>

<i>C - 10</i>  <i>AR - 10</i>	<p>follow-up for different age groups. Know indicators for efficiency of follow-up and rules of the reporting to the health authorities. Know the methodical approaches to assess the environment for pollution and the presence of factors which affect the health of the population in this environment. Know principle of rational nutrition, water supply, mode of activity and rest, forming a favorable work environment, primary prevention of diseases and injuries; Principles and methods of promoting healthy lifestyles</p> <p>Based on the results of follow-up and analysis of children's health, and environment know the principles of submitting analytical information to local government and health authorities to eliminate harmful effects on children's health.</p> <p>Be responsible for timely and qualitative activities on assessment of the health of children, health improvement and improvement of the health of certain contingents, improving the environment, promoting healthy lifestyles, primary prevention of diseases and injuries.</p>	
<i>Kn - 12</i>  <i>Sk - 12</i>  <i>C - 12</i>  <i>AR - 12</i>	<p>Know criteria for assessment of the general condition of the newborn child. Know modern algorithms and standard schemes in neonatology. Be aware of ethical and legal issues in neonatology.</p> <p>Perform physical examination of a newborn</p> <p>Assess the general condition of the newborn child by making an informed decision according to existing algorithms and standard schemes, adhering to the relevant ethical and legal norms.</p> <p>Be responsive for quality care in for newborn</p>	<b>PLR12</b>
<i>Kn - 13</i>  <i>Sk - 13</i>  <i>C - 13</i>  <i>AR - 13</i>	<p>Know monitoring of child's development, provide recommendations for breastfeeding and nutrition depending on age, management of preventive vaccinations</p> <p>Be able to assess the health of patients and the affected population; to organize medical examination of children who require supervision.</p> <p>Organize follow-up supervision of patients (secondary prevention of diseases) and healthy persons who is subject to further follow-up supervision (primary prevention of diseases).</p> <p>Be responsible for the quality of the organization of follow-up supervision of certain groups of children.</p>	<b>PLR13</b>
<i>Kn - 14</i>  <i>Sk - 14</i>  <i>C - 14</i>  <i>AR - 14</i>	<p>Know the algorithms for providing emergency medical care in emergencies</p> <p>Be able to provide emergency medical care in most common emergency conditions in children.</p> <p>Explain the need and procedure for therapeutic measures of emergency medical care.</p> <p>Be responsible for the timeliness and quality of emergency medical care</p>	<b>PLR14</b>
<i>Kn - 17</i>  <i>Sk - 17</i>  <i>C - 17</i>  <i>AR - 17</i>	<p>Have specialized knowledge of algorithms for performing medical manipulations.</p> <p>Be able to carry out medical manipulations</p> <p>Formulate and inform the patient, and/or his parents (care givers) regarding the need for medical manipulations</p> <p>Be responsible for the quality of medical manipulations</p>	<b>PLR17</b>
<i>Kn - 18</i>  <i>Sk - 18</i>  <i>C - 18</i>	<p>Know functioning and restrictions of life of the person and the duration of disability with the registration of relevant documents at health care institution on the basis of data on illness and its course, features of human professional activity.</p> <p>Be able to keep a medical document on the patient and a certain</p>	<b>PLR18</b>

<i>AR - 18</i>	contingent of the population on the basis of regulatory documents. Be responsible for protection of private medical information			
<i>Kn - 20</i> <i>Sk - 20</i> <i>C - 20</i> <i>AR - 20</i>	Know principles of epidemiology and epi-/pandemic disease prevention strategies Be able to analyze the epidemiological condition and take measures of mass and individual, general and local prevention of infectious diseases. Be responsible for the local disease prevention		<b>PLR20</b>	
<i>Kn - 21</i> <i>Sk - 21</i> <i>C - 21</i> <i>AR - 21</i>	Know major information paid and free resources on the internet, copyright rules, and rules of electronic access Be able to search for the necessary information in the professional literature and databases, analyze, evaluate and apply this information Be responsible for sharing updated professional information with colleagues		<b>PLR21</b>	
<i>Kn - 24</i> <i>Sk - 24</i> <i>C - 24</i> <i>AR - 24</i>	Know about professional health protection measures Be able to organize the necessary level of individual safety (own and care persons) in the event of typical dangerous situations in the individual field of activity. Be responsible for personal and patient safety.		<b>PLR24</b>	
<i>Kn - 25</i> <i>Sk - 25</i> <i>C - 25</i> <i>AR - 25</i>	Know principles of logical thinking and making informed conclusions, essential vs non-essential information Ability to make an informed decision based on a set of arguments Be responsible and produce competency toward clear professional statements		<b>PLR25</b>	
<i>Kn - 29</i> <i>Sk - 29</i> <i>C - 29</i> <i>AR - 29</i>	Know epidemiology of the most common infectious diseases, including preventable diseases, national schedule for vaccination of children of various ages Be able and responsible to plan, organize and conduct activities for the specific prevention of infectious diseases, including in accordance with the National Calendar of preventive vaccinations, both mandatory and recommended. Manage vaccine residues; organize additional vaccination campaigns, including immunoprophylaxis measures.		<b>PLR29</b>	
<b>6. Format and scope of the course</b>				
<b>Type of activity</b>	<b>Number of hours</b>		<b>Number of groups</b>	
<i>Lectures (full-time lesson)</i>	0		x (foreigners)	
<i>Workshops (full-time lesson)</i>	100		x (foreigners)	
<i>Self-studying (full-time lesson)</i>	95		x (foreigners)	
<b>7. Topics and content of the course</b>				
<b>Code of the type of the classes</b>	<b>Topic</b>	<b>Content of the studying</b>	<b>Learning results code</b>	<b>Teacher</b>
W-1 (workshop 1)	Differential diagnosis of pneumonia in children. Acute	Leading clinical symptoms and syndromes in different clinical variants of pneumonia in children. Results of laboratory	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura



	respiratory disease COVID-19 in children. Current aspects of treatment	and instrumental studies in different clinical variants of pneumonia. Differential diagnosis of pneumonia, bronchitis, and bronchiolitis in children. Making a preliminary diagnosis. Treatment of patients with different clinical variants of pneumonia. Prevention of pneumonia and its complications in children. Clinical presentation and course of COVID-19. Updated diagnosis and management protocol. Prophylaxis		
W-2 (workshop 2)	Complications of pneumonia. Emergency care in acute respiratory failure in children.	Differential diagnoses in pleurisy, abscess, pyothorax, and pneumothorax. Clinical presentation and laboratory evaluation. Radiologic differences pleurisy, abscess, pyothorax, and pneumothorax. Assessment of acute respiratory failure in children. Severity staging. Blood gases and base-acid balance. Types and techniques of oxygen therapy. Indications in advanced respiratory support.	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura
W-3 (workshop 3)	Differential diagnosis of bronchial obstruction in children. Differential approach to treatment of bronchial obstruction in children.	Leading clinical symptoms and syndromes in bronchial asthma, bronchiolitis and acute obstructive bronchitis in children. Peculiarities of asthma in children, depending on the severity and level of control. Results of laboratory and instrumental studies in bronchial asthma, bronchiolitis and acute obstructive bronchitis and its complications. Differential diagnosis of asthma and bronchial obstruction versus acute respiratory infections in children of all ages. Making the preliminary diagnosis. Treatment of patients with different clinical variants of obstructive syndrome and its complications in children. Providing emergency assistance in an asthma attack and status asthmaticus. Prevention of asthma and bronchial obstruction syndrome against acute respiratory infections in	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura

		children of all ages.		
W-4 (workshop 4)	Differential diagnosis of hereditary, congenital, and chronic disease of the bronchopulmonary system in children.	Leading clinical symptoms and syndromes in chronic bronchitis, bronchiectasis, hereditary and congenital diseases of respiratory system (cystic fibrosis, idiopathic pulmonary hemosiderosis, primary cilia dyskinesia, a syndrome of Wilms Campbell bronchomalacia, aplasia and hypoplasia of the lungs, $\alpha$ 1-antitrypsin deficiency, bronchopulmonary dysplasia, sequestration lung) in children. The results of laboratory and instrumental studies in chronic bronchitis, bronchiectasis, hereditary and congenital diseases of the respiratory system and their complications. Differential diagnosis of chronic, hereditary, and congenital bronchopulmonary disease in children. Clinical management of patients with hereditary, congenital, and chronic bronchopulmonary diseases and their complications in children. Prevention of hereditary, congenital, and chronic bronchopulmonary diseases in children.	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura
W-5 (workshop 5)	Differential diagnosis of inflammatory and non-inflammatory heart disease in children. Treatment of chronic heart failure.	Leading clinical symptoms and syndromes of heart disease in children. Clinical variants and complications of myocarditis, endocarditis, pericarditis, cardiomyopathies, congenital and acquired heart defects in children. Data from laboratory and instrumental tests in myocarditis, endocarditis, pericarditis, cardiomyopathies, congenital and acquired heart defects in children. Clinical manifestations of heart failure in children of different ages. Differential diagnosis of inflammatory and non-inflammatory diseases of the circulatory system in children. Tactics of patient management in myocarditis, endocarditis, pericarditis, cardiomyopathies, congenital and acquired heart	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura

		defects in children. Treatment and prevention of chronic heart failure.		
W-6 (workshop 6)	Differential diagnosis of abnormal cardiac rhythm and conduction in children. Emergency care in paroxysmal rhythm disturbances and Morgan-Adam Stokes syndrome.	Leading clinical symptoms and syndromes in extrasystole, paroxysmal tachycardia, atrial fibrillation, complete atrioventricular block. Clinical variants of the course of paroxysmal tachycardia and fibrillation in children. The results of instrumental studies at extrasystole, paroxysmal tachycardia, atrial fibrillation, complete atrioventricular block. Differential diagnosis of arrhythmia, paroxysmal tachycardia, atrial fibrillation and complete atrio-ventricular block. Clinical management of patients with arrhythmia, paroxysmal tachycardia, atrial fibrillation, complete atrio-ventricular block in children. Provision emergency care for paroxysmal tachycardia, atrial fibrillation, Morgan-Adams-Stokes syndrome, in children. Prevention of cardiac rhythm and conduction abnormality in children.	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura
W-7 (workshop 7)	Differential diagnosis of systemic connective tissue disease and systemic vasculitis in children.	Leading clinical symptoms and syndromes in juvenile rheumatoid arthritis, systemic lupus erythematosus, acute rheumatic fever, dermatomyositis, scleroderma, Kawasaki disease, polyarteritis nodosa and other systemic vasculitis in children. Clinical variants of the course and complications of systemic connective tissue diseases and systemic vasculitis in children. The results of laboratory and instrumental studies in systemic connective tissue diseases and systemic vasculitis in children. Differential diagnosis of systemic connective tissue diseases in children. Differential diagnosis of arthritis in children. Clinical management of patients with systemic connective tissue diseases and systemic vasculitis in children. Primary and	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura

		secondary prevention of acute rheumatic fever in children.		
W-8 (workshop 8)	Differential diagnosis of arterial hypertension in children. Metabolic syndrome	Evaluation of a pediatric patient with arterial hypertension. Correct measurement of blood pressure. Automated pressure blood pressure monitoring. Use of age and height distribution (percentile) tables for grading arterial pressure by the severity. Differential diagnosis in arterial hypertension. Evaluation of the target organs damage in arterial hypertension. Types of anti-hypertensive drugs. Treatment of hypertensive crisis in a pediatric patient. Emergency care. Fasting glucose, blood pressure, lipid profile, and body weight in metabolic syndrome in children. Risk for diabetes mellitus, fatty hepatosis, cardiac disease. Management approaches: lifestyle and drugs.	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura
W-9 (workshop 9)	Differential diagnosis of functional and organic disease of the stomach and duodenum in children.	Leading clinical symptoms and syndromes in the functional and organic diseases of the stomach and duodenum in children (functional dyspepsia, reflux disease, gastritis, gastric ulcer and duodenal ulcer). Clinical - instrumental investigations and Differential diagnosis of dyspeptic and abdominal pain syndromes in children. Clinical variants of the course of gastric ulcer and duodenal ulcer disease. Clinical management of children with functional and organic diseases of the stomach and duodenum. Diagnosis of a complicated course of gastric ulcer and duodenal ulcer in children, tactics of the general practitioner, emergency aid. Prevention of functional and organic diseases of the stomach and duodenum in children.	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura
W-10 (workshop 10)	Differential diagnosis of functional and organic disease of intestines in children.	Leading clinical symptoms and syndromes in the functional and organic diseases of the intestines in children (functional constipation, reflux disease, irritable bowel syndrome, disaccharidase deficiency, exudative enteropathy, celiac	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura

		disease, cystic fibrosis, Crohn's disease, ulcerative colitis). Clinical - instrumental investigations and differential diagnosis of dyspeptic, abdominal pain, and intestinal absorption syndrome disorders in children. Clinical variants of diseases of intestines. Clinical management of children with functional and organic diseases of the intestines. Prevention of functional and organic diseases of the intestines in children.		
W-11 (workshop 11)	Differential diagnosis of disease of the hepatic, biliary system, and the pancreas in children. Syndrome of portal hypertension. Emergency care in acute hepatic failure.	Leading clinical symptoms and syndromes in biliary dyskinesia, acute and chronic cholecystitis, acute and chronic pancreatitis, and chronic hepatitis in children. Clinical variants of the course of biliary dyskinesia, acute and chronic cholecystitis, acute and chronic pancreatitis, and chronic hepatitis in children. The results of laboratory and instrumental studies in biliary dyskinesia, acute and chronic cholecystitis, acute and chronic pancreatitis, and chronic hepatitis in children. Differential diagnosis of biliary dyskinesia, acute and chronic cholecystitis, acute and chronic pancreatitis, and chronic hepatitis in children. Clinical management of patients with biliary dyskinesia, acute and chronic cholecystitis, acute and chronic pancreatitis, and chronic hepatitis in children. Providing emergency care in acute hepatic failure and complications of portal hypertension syndrome. Prevention of biliary dyskinesia, acute and chronic cholecystitis, acute and chronic pancreatitis, and chronic hepatitis in children.	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura
W-12 (workshop 12)	Food and drug allergy in children	Leading clinical symptoms of food and drug allergies in children. Diagnostic algorithm: laboratory and instrumental methods of examination, consultations. Clinical management of children with food and drug allergies. Providing emergency care for hives, anaphylactic shock.	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura

<p>W-13 (workshop 13)</p>	<p>Differential diagnosis of infectious inflammatory disease of the urinary system in children. Differential diagnosis of hereditary disease of the urinary system in children.</p>	<p>Leading clinical symptoms and syndromes in inflammatory diseases of the urinary system (urinary system infections, urethritis, cystitis, pyelonephritis) dysmetabolic nephropathy, hereditary tubulopathy (phosphate diabetes, Syndrome Debre-de Toni-Fanconi, renal diabetes insipidus, renal tubular acidosis) and interstitial nephritis in children. Clinical variants of the course and complications of infectious diseases of the urinary system, interstitial nephritis, nephropathy and hereditary dysmetabolic tubulopathy in children. The results of the laboratory and instrumental studies at the most common inflammatory diseases of the urinary system, interstitial nephritis, dysmetabolic nephropathy and hereditary tubulopathy in children. Differential diagnosis of the most common infectious diseases of the urinary system, interstitial nephritis, nephropathy and hereditary dysmetabolic tubulopathy in children. Clinical management of the sick child in the most common inflammatory diseases of the urinary system and their complications, with interstitial nephritis, with dysmetabolic nephropathy and hereditary tubulopathy in children. First aid in acute urinary retention. Preventing urethritis, cystitis, pyelonephritis.</p>	<p>PLR 2, 4-7, 14, 17, 21,27</p>	<p>Sergiy Gerasymov Oksana Matsyura</p>
<p>W-14 (workshop 14)</p>	<p>Differential diagnosis of glomerulonephritis in children. Differential approach to treatment of glomerulonephritis in children. Acute and chronic kidney failure. Treatment tactics and emergency</p>	<p>Clinical and morphological variants of primary glomerulonephritis in children. Differential diagnosis of acute post-streptococcal glomerulonephritis with hereditary Alport nephritis, rapidly progressive glomerulonephritis, Berger's disease. Nephrotic syndrome in children: Differential diagnosis, complications. Clinical variants of chronic glomerulonephritis in</p>	<p>PLR 2, 4-7, 14, 17, 21,27</p>	<p>Sergiy Gerasymov Oksana Matsyura</p>

	care.	children. Indications for renal biopsy in children. Clinical management of the sick child in acute and chronic glomerulonephritis. Tactics in treatment of acute and chronic glomerulonephritis in children. Clinical supervision of children with glomerulonephritis. Prevention of chronic kidney disease. Acute kidney injury (acute renal failure) in children: etiology, pathogenesis, clinical and laboratory symptoms, Differential diagnosis. Emergency tactics of sick children. Chronic renal failure. Treatment approach. Prevention of progression of chronic renal failure.		
W-15 (workshop 15)	Differential diagnosis of lymphoproliferative syndrome in children.	Laboratory evaluation in lymphadenopathy, splenomegaly. Gastrointestinal presentation and involvement of mediastinum. Immune deficiency syndromes as a background of lymphoproliferative syndrome in children. X-linked lymphoproliferative disorders, autoimmune lymphoproliferative syndrome, primary immune deficiencies, posttransplant lymphoproliferative disorder. Differential diagnosis in pediatric non-Hodgkin lymphoma.	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura
W-16 (workshop 16)	Medical supervision of children in the first three years of life in the polyclinic setting. Integrated management of childhood illnesses.	Procedure for obligatory preventive examinations of children under three years old. Efficient feeding and nutrition of the child under three years old. Evaluation of physical and psycho-motor development of children up to three years. Tactics of the general practitioner in violation of physical and neuropsychological development of children during the first three years of life. Principles of effective counseling. Differential diagnosis and prevention of the most common deficient states (rickets, iron deficiency) in infants. Prophylactic vaccination	PLR 2, 4-7, 14, 17, 21,27	Sergiy Gerasymov Oksana Matsyura

		<p>of children up to three years.</p> <p>The strategy of integrated management of childhood illness and its purpose. Common signs of danger for the child. Evaluation, classification, treatment, consultation and follow-up for coughing, difficulty in breathing, diarrhea, problems with the ear, sore throat, fever, malnutrition and anemia, the presence of HIV infection in children from 2 months to 5 years. Evaluation, classification, treatment, consultation, and follow-up of children under the age of 2 months with jaundice, diarrhea, feeding problems and low birth weight, very severe illnesses, and local bacterial infection.</p>		
W-17 (workshop 17)	Resuscitation of a newborn.	<p>Basic principles of newborn resuscitation. Indications for resuscitation. Anticipation of resuscitation need. Initial steps. Temperature control, clearing the airway, assessment of oxygen need and administration of oxygen, pulse oximetry, administration of supplementary oxygen, positive-pressure ventilation, initial breaths and assisted ventilation, end-expiratory pressure, assisted-ventilation devices, endotracheal tube placement, chest compressions, medications. Withholding and discontinuing resuscitation.</p>	PLR 12, 14, 17, 21,27	Dmytro Dobryanskyy
SS1 (self-studying 1)	Differential diagnosis of pulmonary diseases in newborns.	<p>Diagnostic approach for lung pathology in newborns. Assessment of the type and severity of respiratory disorders. Differential diagnosis. The main complications. Contemporary approaches to treatment.</p>	PLR 2-7	Oksana Matsyura Sergiy Gerasymov
SS2 (self-studying 2)	Current aspects in antibiotic therapy in children.	<p>Therapeutic range of antibiotic therapy. Types of antibacterial drugs. Types of antibiotic action modes. Pharmacokinetics, pharmacodynamics. Age-specific indications and contraindications and concomitant pathology.</p>	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS3 (self-studying 3)	Critical congenital heart	<p>Early prenatal and early postnatal diagnosis of critical</p>	PLR 2-7	Sergiy Gerasymov Oksana Matsyura



	defects - diagnosis and management of patients.	heart defects. Management and prognosis.		
SS4 (self-studying 4)	Pericarditis in children. Medicines used in pediatric cardiology.	Differential diagnosis of pericarditis. Interdisciplinary approach to diagnosis, and follow-up.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS5 (self-studying 5)	Kawasaki disease in children: causes, symptoms, diagnosis and treatment.	Differential diagnosis of the disease and Kawasaki syndrome. Diagnostic approach, treatment, prognosis.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS6 (self-studying 6)	Metabolic syndrome – diagnosis and management.	Differential diagnosis of metabolic syndrome in children. Making clinical diagnosis. Management of metabolic syndrome. Prevention.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS7 (self-studying 7)	Helminthiasis in children.	The state of the art in helminthiasis in children. Prevalence, polymorphism of clinical manifestations. Modern opportunities for diagnosis. Management.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS8 (self-studying 8)	Differential diagnosis of malabsorption syndrome in children.	Malabsorption syndrome, clinical manifestations, causes. Current approaches to the diagnosis of malabsorption syndrome, treatment. Multidisciplinary approach.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS9 (self-studying 9)	Differential diagnosis of jaundice in children.	Diagnostic approach to jaundice in children of different age groups. Interdisciplinary approach. Interpretation of the results of laboratory and instrumental examinations. Management.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS10 (self-studying 10)	Induction of oral tolerance in children of different age groups (prevention of food allergies).	Induction of oral tolerance is a new and promising therapeutic approach in the treatment of persistent allergy.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS11 (self-studying 11)	Anomalies of the urinary system accompanied by pathologic urodynamics in children.	Anomalies of development of the urinary system, which lead to impaired urodynamics and cause urinary retention. Complications, timely diagnosis and management.	PLR 2-7;	Sergiy Gerasymov Oksana Matsyura
SS12 (self-studying 12)	Diseases accompanied by hematuria in children. Renal	Differential diagnosis of hematuria in children. Diagnostic approach. Management.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura

	replacement therapy.			
SS13 (self-studying 13)	Differential diagnosis of the most common hematological diseases in children.	Leading clinical symptoms and syndromes of hematological diseases (anemia, thrombocytopenia and thrombocytopeny, coagulopathy). Data from laboratory and instrumental studies. Clinical variants of course and complications. Management.	PLR 2-7;	Sergiy Gerasymov Oksana Matsyura
SS14 (self-studying 14)	Nutrition of children of the first 3 years of life: intake of vitamins and macro- and micronutrients with food.	Rational feeding and nutrition of a child under three years of life. Leading clinical symptoms and syndromes in insufficiencies of vitamins and trace elements. Diagnosis and principles of correction.	PLR 2-7	Sergiy Gerasymov Oksana Matsyura
SS15 (self-studying 15)	Asphyxia of newborns and perinatal CNS lesions: prevention, differential diagnosis and principles of treatment.	Differential diagnosis of asphyxia and perinatal CNS lesions in newborns. Diagnostic algorithm. Management.	PLR 2-7	Dmytro Dobryansky

The following teaching methods are used to develop skills:

- ✓ verbal/oral (explanation, cases);
- ✓ visual (observation, illustration, demonstration);
- ✓ practical (near the patient's tub, work in the admission department, departments of functional diagnostics, rehabilitation, manipulation, on simulators, etc.);
- ✓ explanatory-illustrative or information-receptive, which involves the presentation of ready-made information by the teacher and its assimilation by students.

### **8. Verification of learning results**

Current control is carried out during the training sessions and aims to check the assimilation of students' educational material (it is necessary to describe the forms of current control during training sessions). Forms of assessment of current educational activities should be standardized and include control of theoretical and practical training. For the final grade for the current educational activity a **4-th grade** (national) scale is used. All types of work are considered in this case. The student should get an estimate from each topic and then it will be converted into points according to 200-point scale.

The student answers 10 MCQs (devoted to the topic of the lesson, format A). Right answers: for 10-9 MCQs = 5 points; by 8-7 MCQs = 4 points; 6-5 MCQs = 3 points; 4 or less MCQs = 0 points.

Answers standardized questions, knowledge of which is necessary to understand the current topic.

Demonstrates knowledge and skills of practical skills in accordance with the topic of the workshop.

Solves a clinical case according to the topic of the lesson.

#### **Criteria for evaluation of educational activities**

**Excellent ("5")** – the student answered correctly 90-100% of the A format test (from the database "Step-2").

Correctly, clearly, logically corresponds to all standardized questions of the current topic.

Connects theory with practice and demonstrates the correct implementation of practical skills.

Fluent in interpretation of the laboratory test results, adepts at prescribing appropriate examination methods.

Makes differential diagnosis. Solves clinical case with higher level of difficulty and knows how to compile the material.

**Good ("4")** - the student answered correctly 70-89% of the of A format test (from the database "Step-2"). Correctly and essentially responds to all standardized questions of the current topic. Demonstrates knowledge of practical skills. Correctly uses theoretical knowledge in solving practical problems, conducts a differential diagnosis. Capable to solve easy and medium complexity clinical cases. Possesses all necessary practical skills and techniques to perform their uses, more than the required minimum.

**Satisfactory ("3")** - the student answered correctly 50-69% of the A format test (from the database "Step-2"). Incomplete, with the help of additional questions answers all the standardized questions on the current topic. Cannot independently makes a clear logical answer. While the student is answering and demonstrating practical skills, he makes mistakes. Can solve only the easiest situational tasks. Has knowledge of only the minimum methods of investigations.

**Unsatisfactory ("2")** - the student answered correctly 50% of the test of A format. Does not know the material of the current topic, cannot build a logical response, does not respond to additional questions, and does not understand the content of the material. Makes significant, gross mistakes when answering and demonstrating practical skills.

Evaluation of the students' independent work for preparation for the practical classes is carried out during the current control of the topic at the appropriate workshop.

**Current control**

<i>Learning results code</i>	<i>Code of the type of the classes</i>	<i>Verifying learning outcomes method</i>	<i>Enrollment criteria</i>
Kn-2, 4-7, 14, 17, 21,27, Sk-2, 4-7, 14, 17, 21,27 C – 2, 4-7, 14, 17, 21,27 AR -2, 4-7, 14, 17, 21,27	W 1-17 SS -1-15	Material is checked during practical classes in accordance with the topics. Current control is carried out at each practical lesson. The initial stage - answers to 10 test tasks. In the first practical lesson, tests test the knowledge of pediatrics in the disciplines of prerequisites. The main part of the lesson is the practical work of the student at the bedside of a patient. A lecturer with students is bypassing the patients. Students examine sick children, collect anamnesis, examine them, perform diagnostic manipulations, etc. Control of the main part of the lesson is carried out by assessing the student's practical skills, ability solve typical situational tasks. The lecturer discusses and gives explanations, emphasizes the features of the disease course in a particular child, targets a more rational realization of this or that method of examination, etc. The control of this stage is carried out by the teacher by assessing the students' skills and abilities when he is working with a sick child, filling in the documentation, interprets the test results, etc.). At the final part of workshop students are giving an answer to clinical case. The teacher sums up the results of the lesson, gives	Initial stage: 10-9 MCQs = 5 points; by 8-7 MCQs = 4 points; 6-5 MCQs = 3 points; 4 or less MCQs = 0 points.  Main stage: traditional grades of 5, 4, 3, 2. "5" - correct, clear logical answer to all standardized questions of the current topic; correct performance of practical skills of mastering the methods of examination of the patient; brief interpretation of survey results; differential diagnosis. "4" - correctly and essentially answers all standardized questions of the current topic; demonstrates performance/knowledge of practical skills; differential diagnosis. "3" - incompletely, with the help of additional questions, answers all standardized questions of the current topic; cannot independently build a clear, logical answer; makes mistakes when answering and

		<p>students the task for independent work, points the key questions of the next topic and offers a list of recommended literature for self-study.</p> <p>Independent work (IW) is performed by the student independently out of the classroom and evaluated overall.</p>	<p>demonstrating practical skills.</p> <p>"2" - does not know the material of the current topic, can not formulate a logical answer, does not answer additional questions, does not understand the content of the material; makes significant, gross mistakes when answering and demonstrating practical skills.</p> <p>IW is assessed, in addition to considering in current classes, when it is performed or not at the end of each semester</p>
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**Final control**

<b>General evaluation system</b>	Participation in the work during the semester / credit on a 200-point scale	
<b>Rating scales</b>	traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale	
<b>Admission to final control</b>	The student attended all practical (laboratory, seminar) classes and received at least 120 points for current performance	
<b>Type of final control</b>	<b>Methods of final control</b>	<b>Enrollment criteria</b>
Credit	All topics for current control submitted. Grades from the 4-point scale are converted into points on a multi-point (200-point) scale in accordance with the provision "Criteria, rules and procedures for evaluating the results of student learning activities"	The maximum number of points is 200. The minimum number of points is 120

The calculation of points is carried out based on the student's grades according to the 4-th grads (national) scale during the study of the discipline, by calculating the arithmetic mean (AM) rounded up to two decimal places. Resulting value is converted into points according to multipoint scale as follows:

$$x = \frac{CA \times 200}{5}$$

**9. Course policy**

It is based on the full implementation of the curriculum of the course (attending workshops, working academic debts up, performing independent tasks), academic integrity, lack of plagiarism.

**Observance of academic integrity by students:**

1. Independent performance of educational tasks, tasks of current and final control of results;
2. Links to sources of information in the case of the use of ideas, developments, statements, information;
3. Observance of the legislation on copyright and related rights.
4. Providing reliable information about the results of their own (scientific, creative) activities, used research methods and sources of information.

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### **11. Equipment, logistics and software of the discipline / course**

- Training program of the discipline
- Plans of practical classes, and independent work of students
- Methodical instructions for practical training for students
- Methodical instructions for practical training for teachers
- Methodical materials that provide independent work of the student
- MCQs and cases for practical classes

### **12. Additional information**

Materials related to the educational and organizational process (thematic plan, schedule of classes, schedules of consultations and work up of missed classes) are available on the website of the department:

[Kaf\\_pediatrics\\_2@meduniv.lviv.ua](mailto:Kaf_pediatrics_2@meduniv.lviv.ua)

Educational and methodical materials (topic guidelines) for preparation for practical classes, independent

work, self-control, abstracts of lectures are available on the MISA platform in the section "Department of Pediatrics №2" on the website of LNMU named after Danylo Halytsky: [http://misa.meduniv.lviv.ua/login / index.php](http://misa.meduniv.lviv.ua/login/index.php)

The work plan of the student scientific group with the lists of student scientific society members are posted at the beginning of the academic year on the website of the department.

The person responsible for the syllabus Gerasymov SV, Ph.D., Associate Professor \_\_\_\_\_

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