

# SYLLABUS

## 1. General information on the course

<b>Full course name</b>	Pediatrics
<b>Full official name of a higher education institution</b>	Sumy State University
<b>Full name of a structural unit</b>	Medical Institute. Department of Pediatrics
<b>Author(s)</b>	Petrashenko Viktoriia Oleksandrivna
<b>Cycle/higher education level</b>	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
<b>Semester</b>	3 weeks during 8-th semester
<b>Workload</b>	The volume of the discipline is 4 ECTS credits, 120 hours, of which 80 hours is contact work with the teacher (70 hours of practical classes and 10 hours of lectures), 40 hours is independent work
<b>Language(s)</b>	English

## 2. Place in the study programme

<b>Relation to curriculum</b>	Compulsory course available for study programme "Medicine"
<b>Prerequisites</b>	Krok-1, Required knowledge of: Latin and medical terminology, - medical biology, - medical informatics, - human anatomy, - physiology, - histology, cytology and embryology, - biological and bioorganic chemistry, - microbiology, virology and immunology, - pathomorphology, - pathophysiology , - pharmacology, - hygiene and ecology, - propaedeutics of pediatrics, - nursing practice, - radiology.
<b>Additional requirements</b>	There are no specific requirements
<b>Restrictions</b>	There are no specific restrictions

## 3. Aims of the course

The aim of the discipline is to achieve modern knowledge and professional skills in pediatrics based on knowledge of age anatomical and physiological features of the child organism, medical biology, normal anatomy, normal physiology, histology and embryology, biochemistry, microbiology and virology, pathomorphology, pathophysiology, pharmacology and skills of clinical, laboratory and instrumental examination of the child with adherence to the principles of medical ethics and deontology.

## 4. Contents

<b>Module 1. Diseases of young children</b>
Topic 1 Functional gastrointestinal disorders of young children Definition, classification (according to Roman criteria PI), etiology, pathogenesis, clinic and diagnosis of cyclic vomiting syndrome. Etiology, pathogenesis, classification, clinic and diagnosis of functional dyspepsia in young children. Etiology, pathogenesis, clinic, diagnosis of colic and functional constipation in young children. Treatment and prevention of functional gastrointestinal disorders from the standpoint of evidence-based medicine. Prevention and prognosis.
Topic 2 Rickets. Hypervitaminosis D. Spasmophilia. Definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment of rickets. Prevention of rickets. Etiology, pathogenesis, clinic, diagnosis, prevention of hypervitaminosis D, emergency care and prognosis. Definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment of spasmophilia from the standpoint of evidence-based medicine. Prevention of spasmophilia.
Topic 3 Protein energy malnutrition. Definition, classification, clinical picture, treatment of protein-energy malnutrition in children from the standpoint of evidence-based medicine . Prevention of hypotrophy.
<b>Module 2. Respiratory diseases in children.</b>
Topic 4 Acute upper respiratory infections in children. Acute bronchitis in children Etiology, pathogenesis, clinical picture, diagnosis, treatment and prevention of acute nasopharyngitis, acute pharyngitis, acute laryngopharyngitis, acute tracheitis in children. Clinical picture and emergency care for acute obstructive laryngitis (croup), hyperthermic syndrome and cramps. Definition, etiology, pathogenesis, clinical picture, diagnosis, treatment and prevention of acute bronchitis, acute obstructive bronchitis, acute bronchiolitis and recurrent bronchitis in children from the standpoint of evidence-based medicine. Prevention of acute upper respiratory infections in children.
Topic 5 Pneumonia in children Definition, etiology, pathogenesis, clinical picture, diagnosis of pneumonia. Treatment of pneumonia in children and emergency care of respiratory insufficiency in children from the standpoint of evidence-based medicine. Prevention of pneumonia in children.
<b>Module 3. Allergic diseases in children</b>
Topic 6 Atopic dermatitis and allergic rhinitis in children. Urticaria in children. Definition, etiology, pathogenesis, clinical picture, diagnosis, treatment, prevention of urticaria in children from the standpoint of evidence-based medicine. Definition, classification, etiology, pathogenesis, clinical picture, diagnosis, treatment and prevention of atopic dermatitis in children, prognosis. Definition, classification, etiology, pathogenesis, clinical picture, diagnosis, treatment and prevention of allergic rhinitis in children, prognosis. Atopic march.

Topic 7 Bronchial asthma in children

Definition. Risk factors and pathophysiological mechanisms of bronchial asthma. Classification, clinical picture, diagnosis, treatment bronchial asthma in children from the standpoint of evidence-based medicine. Prevention of bronchial asthma in children, prognosis. Emergency care of status asthmaticus.

**Module 4. Pediatric cardio rheumatology**

Topic 8 Congenital heart diseases in children

The etiology of the most common CHD in children. Classification of heart defects, hemodynamics of the most common CHD in children (ASG, WSD, Fallot's tetrad, aortic coarctation, pulmonary artery stenosis, aortic stenosis, transposition of arterial vessels and PDA). Diagnosis of the most common CHD in children. Prognosis in the most common CHD in children. Conservative treatment. Indications for cardiac surgery. Treatment of heart failure from the standpoint of evidence-based of medicine. Secondary prevention of infectious endocarditis.

Topic 9 Inflammatory and non-inflammatory heart diseases in children

Accute rheumatic fever. Carditis in children: definition, classification, etiology, pathogenesis, clinical picture, diagnosis, treatment, prognosis. Cardiomyopathies in children: definition, classification, etiology, pathogenesis, clinical picture, diagnosis, treatment, prognosis. Cardiac arrhythmias and conduction in children: classification, causes, clinical picture, diagnosis, treatment, prognosis. Rheumatic fever in children: definition, classification, etiology, pathogenesis, clinical picture, diagnosis, treatment from the standpoint of evidence-based medicine, primary and secondary prevention, prognosis.

Topic 10 Juvenile rheumatoid arthritis and reactive arthritis in children.

JRA: definition, classification, etiology, pathogenesis, clinical picture, diagnosis, treatment, prognosis. Reactive arthritis in children: definition, classification, etiology, pathogenesis, diagnosis, treatment from the standpoint of evidence-based medicine, prognosis.

**Module 5. Diseases of digestive system in children**

Topic 11 Functional and organic disturbance of the esophagus and stomach in children.

Definition, classification, etiology, pathogenesis, clinical picture, diagnosis, treatment from the standpoint of evidence-based medicine, prevention of functional dyspepsia, abdominal pain, gastroesophageal reflux, duodenogastric reflex, organic disturbance of the esophagus and stomach in senior children.

Topic 12 Functional disturbance of the bowel and biliary system in children.

Definition, etiology, pathogenesis, clinical picture, diagnosis, treatment of irritable bowel syndrome, functional constipation, prognosis. Clinical picture, diagnosis, treatment from the standpoint of evidence-based medicine and prevention of gallbladder and sphincter Oddi dysfunction .

Topic 13 Organic disturbance of the bowel and biliary system in children.

Definition, etiology, pathogenesis, clinical picture, diagnosis, treatment of nonspecific ulcerative colitis, Crohn's disease. Clinical picture, diagnosis, treatment from the standpoint of evidence-based medicine and prevention of organic diseases of the biliary system.

<b>Module 6. Diseases of urinary system in children</b>	
Topic 14 Urinary tract infections in children. Chronic renal disease. Definition, classification of urinary tract infections in children, differential diagnosis of lower and upper urinary tract infections. Etiology, pathogenesis, clinical picture, diagnosis, treatment, prevention and prognosis of cystitis in children. Definition, etiology, pathogenesis, classification, clinical picture, diagnosis, treatment from the standpoint of evidence-based medicine, prevention and prognosis of pyelonephritis in children.	
Topic 15 Glomerulonephritis in children. Chronic renal failure in children Definition, classification, etiology, pathogenesis, clinical picture, diagnosis, treatment from the standpoint of evidence-based medicine, prevention and prognosis of glomerulonephritis in children. Chronic renal failure: risk factors, etiology, pathogenesis, stages of the disease, clinical picture, diagnosis, treatment, prevention, prognosis.	
<b>Module 7. Defence of case history. Module control</b>	
Topic 16 Defence of case history Educational case history, based on the clinical supervision of patients with registration data of inspection and additional methods of research, with the aim of establishment and ground of diagnosis and setting of the treatment scheme.	
Topic 17 Computer testing Final tests	
Topic 18 Exam Realization of exam is in accordance with regulation	

### 5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	To get skills of questioning and objective examination of patient. To ground and apply clinical methods for understanding of displays of illness in child's age.
LO2	To conduct differential diagnostics of diseases of child's age, formulate a clinical diagnosis on the basis of evaluation of results of laboratory and instrumental methods of researches.
LO3	Be able to determine the tactics of behavior of patients with different pathological conditions.
LO4	To master the basic classes of pharmacological preparations that are used in pediatric practice, apply apply corresponding clinical and pharmacological principles for the conduct of patients of child's age, to expect the doses of preparations for children.
LO5	To conduct the differential diagnosis of basic syndromes that happen in the clinic of the urgent states for children in practice
LO6	To apply in practice the algorithms of examination and conduct of sick children with the urgent states, to capture the methods of treatment of the urgent states for children

LO7	To ground application of basic invasive and non-invasive diagnostic methods, be able to execute medical manipulation
LO8	To demonstrate possessing of moral and deontological principles of a medical specialist and the principles of professional subordination.

## 6. Role of the course in the achievement of programme learning outcomes

Programme learning outcomes achieved by the course.

For 222 Medicine:

PO1	To detect and identify the leading clinical symptoms and syndromes (according to the List 1); to establish the most probable nosological or syndromic preliminary clinical diagnosis of diseases (according to the List 2) using standard methods, preliminary data of the patient's anamnesis, patient's examination data, and knowledge about a human, his organs and systems.
PO2	To collect information about the patient's general condition; to assess the patient's psychomotor and physical development and the state of organs and systems of the body; to assess information on the diagnosis (according to the List 4) based on laboratory and instrumental findings.
PO3	To order and analyze additional (mandatory and optional) examinations (laboratory, radiological, functional and/or instrumental) (according to the List 4) in order to perform a differential diagnosis of diseases (according to the List 2).
PO4	To establish a final clinical diagnosis at a medical institution under control of a supervising doctor by means of informed decision and logical analysis of the obtained subjective and objective data of clinical and additional examinations, and differential diagnosis, following the relevant ethical and legal norms (according to the List 2).
PO5	To detect the key clinical syndrome or the reason for patient's condition severity (according to the List 3) via informed decision and evaluation of the person's state under any circumstances (at home, in the street, at a healthcare facility), including under emergency and military operation conditions, in the field, with a lack of information and limited time.
PO6	To determine the nature and treatment principles (conservative, operative) in patients with diseases (according to the List 2) at a healthcare facility, at patient's home or during medical evacuation process (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures based on the principles of evidence-based medicine; if needed to go beyond the standard scheme, to substantiate the personalized recommendations under control of a supervising doctor at a medical facility.
PO7	To determine an appropriate work and rest mode in the treatment of diseases (according to the List 2) at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.

PO8	To determine an appropriate diet in the treatment of diseases (according to the List 2) at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.
PO10	To assess the general condition of a newborn child by making an informed decision according to existing algorithms and standard schemes and adhering to the relevant ethical and legal norms.
PO11	To determine the appropriate approach in emergency medical care case under any circumstances, adhering to the relevant ethical and legal norms, by making an informed decision based on the main clinical syndrome (disease severity) and emergency diagnosis (according to the List 3) using standard schemes under limited time conditions based on the principles of evidence-based medicine
PO12	To provide emergency medical assistance under any circumstances, adhering to the relevant ethical and legal norms, by making an informed decision based on the main clinical syndrome (disease severity) and emergency diagnosis (according to the List 3) using standard schemes and predetermined approach under limited time conditions based on the principles of evidence-based medicine.
PO14	To perform medical procedures (according to the List 5) at a medical facility, at home or at work on the basis of a provisional clinical diagnosis and/or health parameters through making an informed decision and adhering to the relevant ethical and legal norms.
PO15	To perform procedures related to emergency medical assistance within a limited time and under any circumstances, using standard schemes on the basis of a medical emergency diagnosis (according to the List 3).
PO16	To plan and implement a system of sanitary and preventive measures against the occurrence and spread of diseases among the population
PO18	To search for the necessary information in the professional literature and databases; to analyze, evaluate, and apply this information. To apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex health problems.
PO19	To estimate influence of environment on the state of health of population

## 7. Teaching and learning activities

### 7.1 Types of training

<b>Topic 1. Functional gastrointestinal disorders of young children</b>
pr.tr.1 "Functional disturbance of GIT in children of early age" (full-time course) Definition, classification (according to the Roman criteria of PI), etiology, pathogenesis, clinical picture, diagnosis.

pr.tr.2 "Treatment of functional disturbance of GIT in children of early age" (full-time course)  
Treatment from the standpoint of evidence-based medicine and prevention of functional gastrointestinal disorders. The study of this topic involves theoretical work in the classroom, in the absence of quarantine restrictions, work at the patient's bedside. By application of virtual simulation (viewing of educational films) with a further discussion.

### **Topic 2. Rickets. Hypervitaminosis D. Spasmophilia.**

pr.tr.3 "Rickets." (full-time course)  
Definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment of rickets from the standpoint of evidence-based medicine. Prevention of rickets. The study of this topic involves theoretical work in the classrooms, acquaintance with the methods of conducting and interpretation of the obtained data of X-ray and ultrasound examination of the chest in the profile departments of the medical institution (according to the cooperation agreement between the medical institution and the university)

pr.tr.4 "Hypervitaminosis D. Spasmophilia." (full-time course)  
Etiology, pathogenesis, clinic, diagnosis, prevention of hypervitaminosis D, emergency care from the standpoint of evidence-based medicine and prognosis. Spasmophilia. Definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine. The study of this topic involves theoretical work in the classroom, in the simulation center (practice of skills to detect latent spasmophilia), the use of virtual simulation (watching educational films for demonstration Hvosstek, Erb, Trusso tests and acute tetany) with a further discussion.

### **Topic 3. Protein energy malnutrition.**

pr.tr.5 "Protein energy malnutrition." (full-time course)  
Definition, classification, treatment and prevention of protein-energy deficiency in children.

pr.tr.6 "Treatment of protein-energy deficiency in children" (full-time course)  
Treatment from the standpoint of evidence-based medicine and prevention of protein-energy deficiency in children. The study of this topic involves theoretical work in the classroom, solving situational problems, work in the simulation center (work with centile tables, measuring of thickness of leather-fatty fold with a caliper or vernier calliper), the use of virtual simulation (viewing of educational films on methods of instrumental and functional methods survey) with a further discussion. In the absence of quarantine restrictions, work in the departments of the medical institution (according to the agreement on cooperation between the medical institution and the university).

### **Topic 4. Acute upper respiratory infections in children. Acute bronchitis in children**

lect.1 "Acute upper respiratory infection in children. Acute bronchitis in children" (full-time course)  
AAcute upper respiratory infection in children. Clinic, diagnosis, treatment from the standpoint of evidence-based medicine. Acute bronchitis in children. Clinic, diagnosis, treatment from the standpoint of evidence-based medicine. Teaching is conducted in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.7 "Acute upper respiratory infection in children." (full-time course)

Etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine and prevention of acute upper respiratory infection in children. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films with the main clinical manifestations of URTI in children) with a further discussion. Role games. If possible, work at the patient's bedside in the specialized departments of the medical institution (according to the agreement on cooperation between the medical institution and the university).

pr.tr.8 "Acute bronchitis in children." (full-time course)

Definition, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine and prevention of acute bronchitis, acute obstructive bronchitis, acute bronchiolitis and recurrent bronchitis in children. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films about this pathology) with a further discussion. In addition, at the study of this theme role plays are envisaged, capture practical skills of palpation, percussion and auscultation near a bed sick in the profile separations of curative establishment (in obedience to an agreement about a collaboration between curative establishment and university). Interpretation of results of laboratory and instrumental methods of inspection, stowage of plan of treatment.

### **Topic 5. Pneumonia in children**

lect.2 "Pneumonia in children" (full-time course)

Definition, etiology, pathogenesis, clinic, diagnosis of pneumonia. Teaching is conducted in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.9 "Pneumonia in children" (full-time course)

Definition, etiology, pathogenesis, clinic, diagnosis of pneumonia. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films about this pathology) with a further discussion. In addition, the study of this topic provides for the acquisition of practical skills of palpation, percussion and auscultation at the patient's bedside in the relevant departments of the medical institution (according to the agreement on cooperation between the medical institution and the university). Interpretation of results of laboratory and instrumental methods of inspection.

pr.tr.10 "Treatment of pneumonia in children." (full-time course)

Evidence-based treatment and prevention of pneumonia in children, emergency care for respiratory failure in children. The study of this topic involves theoretical work in the classroom. In addition, the study of this topic provides role plays, in the absence of quarantine restrictions, work at the patient's bedside in the relevant departments of the medical institution (according to the agreement on cooperation between the medical institution and the university). Stowage of plan of treatment sick.



pr.tr.11 "Complications of pneumonia." (full-time course)

Clinic, diagnosis of complications of pneumonia in children. The study of this topic involves theoretical work in the classroom. In addition, the study of this topic provides role plays, in the absence of quarantine restrictions, work at the patient's bedside in the relevant departments of the medical institution (according to the agreement on cooperation between the medical institution and the university).

pr.tr.12 "Treatment of complications of pneumonia." (full-time course)

Treatment from the standpoint of evidence-based medicine and prevention of complications of pneumonia in children. Emergency care for complications of pneumonia in children. The study of this topic involves theoretical work in the classroom. In addition, the study of this topic provides role plays, in the absence of quarantine restrictions work at the bedside the patient in the profile departments of the medical institution (according to the agreement on cooperation between the medical institution and the university). Drawing up a treatment plan for the patient.

### **Topic 6. Atopic dermatitis and allergic rhinitis in children. Urticaria in children.**

pr.tr.13 "Atopic dermatitis and allergic rhinitis in children." (full-time course)

Definition, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention of atopic dermatitis, allergic rhinitis. Atopic march. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films about the methods of skin tests) with further discussion. In addition, the study of this topic involves work at the patient's bedside in the relevant departments of the medical institution (according to the agreement on cooperation between the medical institution and the university). Interpretation of the results of laboratory and instrumental methods of examination, preparation of a treatment plan.

pr.tr.14 "Quincke's edema in children." (full-time course)

Definition, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention of Quincke's edema in children. The study of this topic involves theoretical work in the classroom. In addition, the study of this topic involves work at the patient's bedside in the relevant departments of the medical institution (according to the agreement on cooperation between the medical institution and the university). Interpretation of the results of laboratory and instrumental methods of examination, preparation of a treatment plan.

### **Topic 7. Bronchial asthma in children**

lect.3 "Bronchial asthma in children" (full-time course)

Bronchial asthma in children. Definition. Risk factors and pathophysiological mechanisms of bronchial asthma. Classification, clinic, diagnosis, treatment from standpoint of of evidence-based medicine and prevention of bronchial asthma in children, prognosis. Emergency care for asthmatic status. Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.15 "Bronchial asthma in children" (full-time course)

Bronchial asthma in children. Definition. Risk factors and athophysiological mechanisms of bronchial asthma. Classification, clinic, diagnosis, treatment and prevention of bronchial asthma in children, prognosis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films about methods of functional and instrumental study of the respiratory system (breathing tests, chest radiography, ultrasound, capnography, scintigraphy, spirometry, peakflowmetry). In addition to the study of this system, role plays, work in the simulation center. Interpretation of the obtained data of research of function of the external breathing (spirometry, peakflowmetry) X-ray and ultrasound examination of the chest in the profile departments of the medical institution (according to the agreement on cooperation between the medical institution and the university).

pr.tr.16 "Treatment of bronchial asthma in children" (full-time course)

Treatment from the standpoint of evidence-based medicine and prevention of bronchial asthma in children, prognosis. Emergency care for asthmatic status. The study of this topic involves theoretical work in the classroom. Work in the profile department of the medical institution (according to the agreement on cooperation between the medical institution and the university), drawing up a plan for the treatment of the underlying disease and providing emergency care.

### **Topic 8. Congenital heart diseases in children**

pr.tr.17 "The most common congenital heart defects in children." (full-time course)

Etiology of the most common CHD white type in children. Classification of heart defects, hemodynamics in the most common CHD in children, diagnosis, tactics, conservative treatment. Indications for cardiac surgery. Treatment of heart failure from the standpoint of evidence-based medicine. Secondary prevention of infectious endocarditis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (work on a 3D virtual simulator) with further discussion. Work in the simulation center and profile departments of the medical institution (conducting and interpretation of the obtained data of FCG, ECG, functional tests, X-ray and ultrasound examination of the heart (according to the agreement on cooperation between the medical institution and the university))

pr.tr.18 "Congenital heart diseases in children" (full-time course)

Etiology of the most common CHD blue type in children. Classification of heart defects, hemodynamics in the most common CHD in children, diagnosis, tactics, conservative treatment. Indications for cardiac surgery. Treatment of heart failure from the standpoint of evidence-based medicine. Secondary prevention of infectious endocarditis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (work on a 3D virtual simulator) with further discussion. Work in the simulation center and profile departments of the medical institution (conducting and interpretation of the obtained data of FCG, ECG, functional tests, X-ray and ultrasound examination of the heart (according to the agreement on cooperation between the medical institution and the university))

### **Topic 9. Inflammatory and non-inflammatory heart diseases in children**

pr.tr.19 "Carditis in children. Cardiomyopathy in children. Cardiac arrhythmias and conduction in children" (full-time course)

Carditis in children: definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prognosis. Cardiomyopathies in children: definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prognosis. The study of this topic involves theoretical work in the classroom. Work in the simulation center and profile departments of the medical institution (conducting and interpreting the obtained data of FCG, ECG, functional tests, X-ray and ultrasound examination of the heart (according to the agreement on cooperation between the medical institution and the university)).

pr.tr.20 "Acute rheumatic fever in children" (full-time course)

Acute rheumatic fever in children: definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, primary and secondary prevention, prognosis. The study of this topic involves theoretical work in the classroom, role plays. Work in the simulation center and profile departments of the medical institution (conducting and interpreting the obtained data of FCG, ECG, functional tests, X-ray and ultrasound examination of the heart (according to the agreement on cooperation between the medical institution and the university))

#### **Topic 10. Juvenile rheumatoid arthritis and reactive arthritis in children.**

pr.tr.21 "Juvenile rheumatoid arthritis and reactive arthritis in children." (full-time course)

JRA: definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, rehabilitation, prognosis. The study of this topic involves theoretical work in the classroom, role plays. Work at the patient's bedside, interpretation of the obtained data of X-ray and ultrasound examination in the profile departments of the medical institution (according to the agreement on cooperation between the medical institution and the university) .

pr.tr.22 "Reactive arthropathies in children." (full-time course)

Reactive arthropathies in children: definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prognosis. The study of this topic involves theoretical work in the classroom, role-playing games. In addition, the study of this system provides role plays. Work at the patient's bedside, interpretation of the obtained data of X-ray and ultrasound examination in the specialized departments of the medical institution (according to the agreement on cooperation between the medical institution and the university), preparation of a treatment plan of basic disease.

#### **Topic 11. Functional and organic disturbance of the esophagus and stomach in children.**

lect.4 "Organic disturbance of the esophagus and stomach in children." (full-time course)

Definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention of organic disturbance of the esophagus and stomach in children. Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.23 "Functional disturbance of the esophagus and stomach in children." (full-time course)

Definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention of functional disturbance of the esophagus and stomach in children. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films which demonstrating the clinical manifestations of major diseases and syndromes) with a further discussion. In addition, the study of this topic includes role plays, improving the skills of palpation, percussion and auscultation at work at the patient's bedside in the specialized department (in the absence of quarantine restrictions), compiling a plan of examination and treatment.

pr.tr.24 "Organic disturbance of the esophagus and stomach in children." (full-time course)

Definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention of organic disturbance of the esophagus and stomach in children. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films with demonstration of clinical manifestations of major diseases and syndromes, review 3-D virtual endoscopy) with a further discussion. In addition, the study of this topic includes role plays, improving the skills of palpation, percussion and auscultation at work at the patient's bedside in the profile department (in the absence of quarantine restrictions), drawing up a survey plan with further interpretation of ultrasound, FGDS and treatment.

## **Topic 12. Functional disturbance of the bowel and biliary system in children.**

pr.tr.25 "Functional disturbance of the bowel in children." (full-time course)

Definition, etiology, pathogenesis, clinic, diagnosis, treatment of irritable bowel syndrome from the standpoint of evidence-based medicine, functional constipation, prognosis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films with demonstration of clinical manifestations of major diseases and syndromes) with a further discussion. In addition, the study of this topic includes role plays, improving the skills of palpation, percussion and auscultation at work at the patient's bedside in the profile department (in the absence of quarantine restrictions), drawing up a survey plan with further interpretation of ultrasound, FGDS and treatment.

pr.tr.26 "Functional disturbance of biliary system in children." (full-time course)

Definition, etiology, pathogenesis, clinic, diagnosis, treatment of biliary dyskinesia from the standpoint of evidence-based medicine. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films with demonstration of clinical manifestations of major diseases and syndromes) with a further discussion. In addition, the study of this topic includes role plays, improving the skills of palpation, percussion and auscultation at work at the patient's bedside in the profile department (in the absence of quarantine restrictions), drawing up a survey plan with further interpretation of ultrasound, FGDS and treatment.

## **Topic 13. Organic disturbance of the bowel and biliary system in children.**

pr.tr.27 "Organic disturbance of the intestine in children." (full-time course)

Definition, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine of nonspecific ulcerative colitis, Crohn disease. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films with demonstration of clinical manifestations of major diseases and syndromes) with a further discussion. In addition, the study of this topic includes role plays, improving the skills of palpation, percussion and auscultation at work at the patient's bedside in the profile department (in the absence of quarantine restrictions), drawing up a survey plan with further interpretation of ultrasound, FGDS and treatment.

pr.tr.28 "Organic disturbance of biliary system in children." (full-time course)

Clinic, diagnosis, treatment from the standpoint of evidence-based medicine and prevention of organic disturbance of the biliary system. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing of educational films with demonstration of clinical manifestations of major diseases and syndromes) with a further discussion. In addition, the study of this topic includes role plays, improving the skills of palpation, percussion and auscultation at work at the patient's bedside in the profile department (in the absence of quarantine restrictions), drawing up a survey plan with further interpretation of ultrasound, FGDS and treatment.

#### **Topic 14. Urinary tract infections in children. Chronic renal disease.**

lect.5 "Urinary tract infections in children." (full-time course)

Definition, classification of urinary tract infections in children, differential diagnosis of lower and upper urinary tract infections. Etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention and prognosis of cystitis in children. Definition, etiology, pathogenesis, classification, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention and prognosis of pyelonephritis in children. Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.29 "Urinary tract infections in children." (full-time course)

Definition, classification of urinary tract infections in children, differential diagnosis of lower and upper urinary tract infections. Etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention and prognosis of cystitis in children. Definition, etiology, pathogenesis, classification, clinic, diagnosis, treatment, prevention and prognosis of pyelonephritis in children. The study of this topic involves theoretical work in the classroom, interpretation of laboratory data, endoscopic examination, X-ray and ultrasound examination of the urinary tract in the departments of the medical institution (according to the cooperation agreement between the medical institution and the university). Work at the patient's bedside.

pr.tr.30 "Chronic kidney disease." (full-time course)

Etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention and prognosis of chronic kidney disease in children. The study of this topic involves theoretical work in the classroom, interpretation of laboratory data, endoscopic examination, X-ray and ultrasound examination of the urinary tract in the departments of the medical institution (according to the cooperation agreement between the medical institution and the university). Work at the patient's bedside.

<b>Topic 15. Glomerulonephritis in children. Chronic renal failure in children</b>	
pr.tr.31 "Glomerulonephritis in children. Acute and chronic renal failure in children" (full-time course)	Definition, classification, etiology, pathogenesis, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention and prognosis of glomerulonephritis in children. The study of this topic involves theoretical work in the classroom, interpretation of laboratory data, endoscopic examination, X-ray and ultrasound examination of the urinary tract in the departments of the medical institution (according to the cooperation agreement between the medical institution and the university). Work at the patient's bedside.
pr.tr.32 "Acute and chronic renal failure in children" (full-time course)	Acute and chronic renal failure: risk factors, etiology, pathogenesis, stages of the disease, clinic, diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. The study of this topic involves theoretical work in the classroom, interpretation of laboratory data, endoscopic examination, X-ray and ultrasound examination of the urinary tract in the departments of the medical institution (according to the cooperation agreement between the medical institution and the university). Work at the patient's bedside.
<b>Topic 16. Defence of case history</b>	
pr.tr.33 "Defence of case history" (full-time course)	Educational case history, based on the clinical supervision of patients with the preparation of survey data and additional research methods, in order to establish and justify the diagnosis and appointment of the treatment regimen.
pr.tr.34 "Defence of case history" (full-time course)	Educational case history, based on the clinical supervision of patients with the preparation of survey data and additional research methods, in order to establish and justify the diagnosis and appointment of the treatment regimen.
<b>Topic 17. Computer testing</b>	
pr.tr.35 "Computer testing" (full-time course)	Computer testing
<b>Topic 18. Exam</b>	
assessm.36 "Final exam" (full-time course)	Conducting the exam in accordance with the regulations

## 7.2 Learning activities

LA1	Writing and defence of case history
LA2	Self-study
LA3	Preparing for KROK 2

LA4	Interpretation of laboratory (clinical analysis of blood, urine, biochemical analysis of blood, immunological tests, etc.) and instrumental (ECG, echocardiography, EFGDS, ultrasound, CT, radiography, spirometry, etc.) examination methods.
LA5	Preparation for practical classes
LA6	Analysis of clinical cases
LA7	Practical work with the patient in the specialized departments of the hospital
LA8	E-learning in systems ( Zoom,MIX.sumdu.edu.ua)
LA9	Preparation for exam
LA10	Viewing of educational films
LA11	Individual research project (student research paper, article, thesis, etc.)
LA12	Work with textbooks and relevant information sources
LA13	Practice of practical skills in the simulation center

## 8. Teaching methods

Course involves learning through:

TM1	Interactive lectures
TM2	Case- based learning (CBL).
TM3	Team-based learning (TBL).
TM4	Research-based learning (RBL).
TM5	Role play
TM6	Brain storm
TM7	Educational discussion / debate

The discipline is taught using modern teaching methods (CBL, TBL, RBL), which not only promote the development of professional skills, but also stimulate creative thinking

The discipline provides students with the following soft skills: 1. Ability to abstract thinking, analysis and synthesis. 2. Ability to learn, master modern knowledge and apply them in practical situations. 3. Knowledge and understanding of the subject industry and understanding of professional activity. 4. Ability to adapt and act in a new situation. 5. Ability to make informed decisions; work in a team; skills interpersonal interaction. 7. Ability to use information and communication technologies. 8. Definiteness and persistence in relation to the set tasks and responsibilities.

## 9. Methods and criteria for assessment

### 9.1. Assessment criteria

ECTS	Definition	National scale	Rating scale
	Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$

	Above the average standard but with minor errors	4 (Good)	$140 \leq RD < 169$
	Fair but with significant shortcomings	3 (Satisfactory)	$120 \leq RD < 139$
	Fail – some more work required before the credit can be awarded	2 (Fail)	$0 \leq RD < 119$

## 9.2 Formative assessment

FA1	Peer assessment
FA2	Defence of case history
FA3	Testing
FA4	Defense of an individual research project (presentation at a conference, competition of scientific works)
FA5	Teacher's instructions in the process of performing practical tasks.
FA6	Interviews and oral comments of the teacher on his results
FA7	Verification and evaluation of written assignments
FA8	Solving clinical cases

## 9.3 Summative assessment

SA1	Valuation of written works, surveys, solving a clinical case
SA2	Defence of case history
SA3	Testing
SA4	Final control: practice-oriented exam (according to the regulations)
SA5	Protection of an individual research project (incentive activities, additional points)

Form of assessment:

<b>7 semester</b>		<b>200 scores</b>
SA1. Valuation of written works, surveys, solving a clinical case		<b>100</b>
		100
SA2. Defence of case history		<b>10</b>
		10
SA3. Testing		<b>10</b>
		10
SA4. Final control: practice-oriented exam (according to the regulations)		<b>80</b>
	Answer to theoretical questions	45
	Performing a practical task	15
	Emergency care	20



## Form of assessment (special cases):

<b>7 semester</b>		<b>200 scores</b>
SA1. Valuation of written works, surveys, solving a clinical case		<b>100</b>
	In case of quarantine restrictions, practical classes are conducted remotely using the platform Mix.sumdu.edu.ua, Zoom, Google meet.	100
SA2. Defence of case history		<b>10</b>
	In case of quarantine restrictions, the exam is conducted remotely using Zoom, Google meet.	10
SA3. Testing		<b>10</b>
	In case of quarantine restrictions, testing is performed remotely using the platform Mix.sumdu.edu.ua	10
SA4. Final control: practice-oriented exam (according to the regulations)		<b>80</b>
	in case of quarantine restrictions, testing is performed remotely using the platform Mix.sumdu.edu.ua, Zoom, Google meet.	80

When mastering the materials of the module, the student is assigned a maximum of 5 points for each practical lesson (the grade is set in the traditional 4-point grading system). At the end of the academic year, the arithmetic mean of student performance is calculated. The maximum number of points that a student can get in practical classes during the academic year - 100. The number of points of the student is calculated by the formula 100 multiplied by the arithmetic mean and divided by 5. For writing a medical history are assigned the following points: "5" - 5 points, "4" - 4 points, "3" - 3 points, "2" - 0 points. Protection of medical history: "5" - 5 points, "4" - 4 points, "3" - 3 points, "2" - 0 points. In general, for the history of the disease the student can get a maximum of 10 points, the minimum required score of 6. For diagnostic testing, the student receives a maximum of 10 points. The minimum number of points that a student must receive is 6 points. The maximum number of points for the current educational activity of the student is 120. The student is admitted to the exam if the requirements of the curriculum are met and if he scored at least 72 points for the current educational activity: 60 points during practical classes, 6 points for medical history and 6 points for testing. The practice-oriented exam is held according to the schedule at the end of the semester. Exam tickets contain 3 theoretical questions on various topics and cover all sections of the discipline (15 points each), 1 practical task (15 points) and the issue of emergency care (20 points). The exam is credited to the student if he scored at least 48 points out of 80. Incentive points are added to the grade for the discipline for the implementation of an individual research project (defense of student work 12 points, presentation at the conference 5 points, poster presentation at the conference 4 points). The total score in the discipline may not exceed 200 points.

## 10. Learning resources

### 10.1 Material and technical support

MTS1	Information and communication systems
MTS2	Library
MTS3	Computers, computer systems and networks

MTS4	Simulation center (phantom of the newborn for primary resuscitation with a set of equipment)
MTS5	Non-commercial Enterprise of Sumy Regional Council «Regional Children Clinical Hospital»
MTS6	Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, screens, smart boards, etc.)
MTS7	Software (to support distance learning), 3-D virtual training on "congenital heart disease"
MTS8	Medical equipment (spirometer, peak flowmeter, electrocardiograph, height meter, scales, fibrogastroscope, tonometer, phonendoscope, etc.)

## 10.2 Information and methodical support

<b>Essential Reading</b>	
1	Nelson Textbook of Pediatrics, 20th edition / Robert M. Kliegman, Bonita F. Stanton, Nina F. Schor [at all.] // London: Elsevier, 2016. – 3880 p.
2	Pediatrics: textbook / O. V. Tiazhka, T. V. Pochinok, A. M. Antoshkina etc. ; edited by O.V. Tiazhka. — 3-rd edition, reprint. — Vinnytsia : Nova Knyha, 2018. — 544 p.
3	USMLE Step 2 CK: Pediatrics: Lecture Notes / Editors W.G. Cvetnic, E. Pino. — New York : Kaplan, 2019. — 281 p.
<b>Supplemental Reading</b>	
1	Evolutionary Thinking in Medicine :From Research to Policy and Practice / edited by Alexandra Alvergne, Crispin Jenkinson, Charlotte Faurie. — 1st ed. 2016. — Cham : Springer International Publishing, 2016
2	Methodological instructions for practical lessons "Urinary tract infections in children»/ S. V. Popov, O. K. Redko, V. O. Petrashenko. — Sumy : Sumy State University, 2020. — 18 p.