

SYLLABUS

1. General information on the course

Full course name	Pediatrics
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра педіатрії
Author(s)	Shkolna Iryna Ivanivna
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Semester	18 weeks across 9 semester
Workload	3.50 ECTS, 105 hours. For full-time course 76 hours are working hours with the lecturer (6 hours of lectures, 70 hours of seminars), 29 hours of the individual study.
Language(s)	English

2. Place in the study programme

Relation to curriculum	Compulsory course available for study programme "Medicine"
Prerequisites	Krok-2, Necessary knowledge of: Latin language 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, propaedeutics of pediatrics, nursing practice, pediatrics, radiology
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims of the course

The aim of the discipline is to achieve modern knowledge and professional skills in neonatology, pediatric endocrinology and pediatric hematology based on knowledge of age anatomical and physiological features of the child's body and skills of clinical, laboratory and instrumental examination of the child in accordance with medical ethics and deontology.

4. Contents

Module 1. Neonatology

Topic 1 Neonatal resuscitation and post-resuscitation care for newborns.

Algorithm for providing primary neonatal resuscitation. Assessment of the child's condition during resuscitation. Indications and methods of performing mechanical ventilation, indirect heart massage, administration of medications during resuscitation.

Topic 2 Neonatal asphyxia. Birth trauma

Neonatal asphyxia: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Birth trauma. Perinatal CNS lesions in newborns. Etiology. Pathogenesis. Classification. Clinic. Diagnosis. Differential diagnosis. Treatment from the standpoint of evidence-based medicine. Prevention. Prognosis

Topic 3 Premature babies. Children with intrauterine growth retardation.

Criteria for determining prematurity. Features of adaptation of premature babies. Etiological factors of prematurity. Anatomical and physiological features. Classification of premature infants by birth weight and the ratio of physical development and gestational age. Assessment of morphological and neuro-functional maturity of premature infants (Ballard scale). Principles of nursing premature babies. Features of breastfeeding premature babies. Emergency care for major emergencies in premature infants from the standpoint of evidence-based medicine: hypothermia, respiratory failure, hypoglycemia. Intrauterine growth retardation: causes, postnatal diagnosis, features of early neonatal adaptation.

Topic 4 Hemolytic disease of newborn. Hemorrhagic disease of newborn

Hemolytic disease of newborn: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. Hemorrhagic disease of newborn: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

Topic 5 Neonatal respiratory distress syndrome (RDS). Neonatal pneumonia

Respiratory distress syndrome of newborns: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. Neonatal pneumonia: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis.

Topic 6 Perinatal infections

TORCH-infections of newborns: etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. Neonatal sepsis: definition, classification, etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis.

Module 2. Hematological diseases in children

Topic 7 Anemia in children (deficient, posthemorrhagic, hemolytic, due to hematopoiesis)

Anemia in children (deficient, posthemorrhagic, hemolytic, due to hematopoietic disorders): definition, etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis

Topic 8 Hemorrhagic diseases in children.

Coagulopathies (hemophilia) in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. Thrombocytopenia (idiopathic thrombocytopenic purpura) in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Hemorrhagic vasculitis in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Emergency care for bleeding in children.

Topic 9 Leukemias and lymphomas in children

Leukemias in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Lymphomas in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis.

Module 3. Endocrinological diseases in children

Topic 10 Diabetes mellitus in children.

Diabetes mellitus in children: definition, etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. Acute and chronic complications of diabetes mellitus in children. Hyperglycemic ketoacidotic and hypoglycemic coma in children: causes, pathogenesis, clinic, diagnosis, differential diagnosis, emergency care, prevention

Topic 11 Diseases of thyroid gland in children

Classification of thyroid gland diseases in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention and prognosis of diffuse toxic goiter, hypothyroidism, autoimmune thyroiditis, endemic goiter in children. Emergency care for thyrotoxic crisis in children.

Topic 12 Diseases of hypothalamic-pituitary system.

Etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis of diseases of growth pathology and obesity in children.

Topic 13 Congenital adrenogenital syndrome

Etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis.

Topic 14 Defence of case history

Educational medical history, based on the clinical curation of patients with the registration of examination data and additional research methods, in order to establish and justify the diagnosis and prescribe a treatment scheme

Topic 15 Tests control

Tests control

Topic 16 Defense of practical skills and manipulation

Defense of practical skills and manipulation

Topic 17 Practically oriented exam
Examination according to the regulations

5. Intended learning outcomes of the course

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

LO1	To acquire the skills of interviewing and objective examination of children of different age groups
LO2	To explain and apply various methods of laboratory and instrumental research to understand the manifestations of the disease in childhood. To interpret the results of examination of children. Make a differential diagnosis of childhood diseases, formulate a clinical diagnosis based on the evaluation of the results of laboratory and instrumental research methods.
LO3	To formulate a clinical diagnosis based on the evaluation of the results of laboratory and instrumental research methods. To determine the tactics of managing patients with various pathological conditions.
LO4	To determine the necessary mode of study, work and rest of healthy children and in the treatment of diseases. To learn the main classes of pharmacological drugs used in pediatric practice, to apply the relevant clinical and pharmacological principles for the management of children's patients, to calculate doses of drugs for children.
LO5	To determine the peculiarities of children's nutrition in the treatment of diseases.
LO6	To determine the principles of treatment of childhood diseases.
LO7	To differentiate the diagnosis of the main syndromes that occur in the emergency clinic in children
LO8	To determine the tactics of providing emergency medical assistance to children
LO9	To learn the main classes of pharmacological drugs used in pediatric practice, to apply the relevant clinical and pharmacological principles for the management of children's patients, to calculate doses of drugs for children. To provide emergency medical care for children
LO10	To carry out sanitary-hygienic and preventive measures for the development of childhood diseases.
LO11	To be able to perform medical manipulations in pediatric practice.
LO12	To determine the tactics, volume and nature of providing emergency medical care to children.
LO13	To carry out manipulations of providing emergency medical care to the children's population
LO14	To work with professional literature, analyze and use the information received
LO15	To assess the influence of the environment on the health of children
LO16	To carry out differential diagnosis of childhood diseases, determine the main clinical syndrome and justify the severity of the disease

LO17	To assess the general condition of a newborn baby
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6. Role of the course in the achievement of programme learning outcomes

Programme learning outcomes achieved by the course.

For 222 Medicine:

PO1	To identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using the previous data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish the most likely nosological or syndromic preliminary clinical diagnosis of the disease.
PO2	Collect information about the general condition of the patient, evaluate 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, evaluate information about the diagnosis
PO3	Prescribe and analyze additional (mandatory and optional) examination methods (laboratory, X-ray, functional and/or instrumental) according to list 4, of patients with diseases of organs and body systems for differential diagnosis of diseases
PO4	To establish a final clinical diagnosis by making a reasoned decision and logical analysis of the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis), observing the relevant ethical and legal norms, under the control of the managing physician in the conditions of a medical institution
PO5	To determine the main clinical syndrome or what causes the severity of the victim's/victim's condition by making a reasoned decision and assessing the person's condition under any circumstances (at home, on the street, in a health care facility, its unit), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited timen in the treatment of diseases.
PO6	To determine the principles of treatment of patients (conservative, operative) with diseases (according to list 2) in the conditions of a health care institution, at the patient's home and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes based on the principles of evidence-based medicine, in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the supervising physician in the conditions of a medical institution.
PO7	To determine the necessary regime of work and rest during the treatment of patients with diseases in the conditions of a health care institution, at the patient's home and at the stages of medical evacuation on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes

PO8	Determine the necessary diet in the treatment of patients with diseases in the conditions of a health care facility, at the patient's home and at the stages of medical evacuation based on a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
PO10	To assess the general condition of a newborn child by making a reasoned decision according to existing algorithms and standard schemes, observing the relevant ethical and legal norms.
PO11	Determine the tactics of providing emergency medical care, under any circumstances, observing the relevant ethical and legal norms, by making a reasoned decision, based on the main clinical syndrome (severity of the condition) of the diagnosis of an emergency (according to list 3) in conditions of limited time using standard schemes based on the principles of evidence-based medicine.
PO12	To provide emergency medical care, under any circumstances, in compliance with the relevant ethical and legal norms, by making a reasoned decision, based on the main clinical syndrome (severity of the condition) of the diagnosis of an emergency (according to list 3) in conditions of limited time in accordance with the defined tactics, using standard schemes based on the principles of evidence-based medicine.
PO14	To perform medical manipulations in the conditions of a medical institution, at home or at work, based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
PO15	To perform manipulations of providing emergency medical care in limited time, using standard schemes, based on the diagnosis of an emergency.
PO16	To plan and implement a system of sanitary-hygienic and preventive measures for the occurrence and spread of diseases among the population.
PO18	To search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information. Apply modern digital technologies, specialized software, and statistical data analysis methods to solve complex healthcare problems.
PO19	To assess the impact of the environment on the health of the population

7. Soft Skills

SS1	Ability to abstract thinking, analysis and synthesis.
SS2	Ability to learn, master modern knowledge and apply it in practical situations
SS3	Knowledge and understanding of the subject area and understanding of professional activity
SS4	Ability to adapt and act in a new situation.
SS5	Ability to make informed decisions; work in a team; interpersonal skills.
SS6	Здатність використовувати інформаційні та комунікаційні технології.

8. Teaching and learning activities

Topic 1. Neonatal resuscitation and post-resuscitation care for newborns.

pr.tr.1 "Primary resuscitation for newborns" (full-time course)

The initial steps of helping newborns and the algorithm of providing primary resuscitation care to newborns. Assessment of the child's condition during resuscitation. Indications and methods of performing mechanical ventilation, indirect heart massage, administration of medications during resuscitation. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (work on a simulator (newborn doll) with pulmonary and cardiac resuscitation) with further discussion.

pr.tr.2 "Primary resuscitation for newborns" (full-time course)

The initial steps of helping newborns and the algorithm of providing primary resuscitation care to newborns. Assessment of the child's condition during resuscitation. Indications and methods of performing mechanical ventilation, indirect heart massage, administration of medications during resuscitation. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (work on a simulator (newborn doll) with pulmonary and cardiac resuscitation) with further discussion.

Topic 2. Neonatal asphyxia. Birth trauma

lect.1 "Neonatal asphyxia" (full-time course)

Asphyxia of the newborn: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. Teaching is conducted in the form of multimedia lectures (in case of quarantine - in online mode).

pr.tr.3 "Neonatal asphyxia" (full-time course)

Asphyxia of the newborn: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis. The study of this topic involves solving situational problems, working in a simulation center (working with centile tables, measuring the thickness of the skin-fatty fold with a caliper), using virtual simulation (watching films on the methodology of instrumental and functional examination methods) with further discussion. In the absence of quarantine restrictions, work in the department of a medical institution (according to the cooperation agreement between the medical institution and the university).

pr.tr.4 "Treatment of neonatal asphyxia" (full-time course)

Treatment from the standpoint of evidence-based medicine, prevention, prognosis in neonatal asphyxia. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films on the specified pathology) with further discussion. In addition, the study of this topic involves clinical cases, mastering practical skills on a dummy of a newborn baby, familiarization with the intensive care unit and intensive care unit in a medical institution (according to the agreement on cooperation between the medical institution and the university). Interpretation of the results of laboratory and instrumental examination methods, drawing up a treatment plan.

pr.tr.5 "Birth defects of newborns" (full-time course)

Birth defects of soft tissues. Adiponecrosis Damage sternocleidomastoid muscle. Differential diagnosis of obstetric tumor and cephalohematoma. Treatment of birth injuries of newborns from the standpoint of evidence-based medicine. Treatment of paresis and paralysis of Duchenne-Erb, Dejerine Klumpke. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films on the specified pathology) with further discussion. work in specialized departments, plan of treatment for patients

pr.tr.6 "Perinatal lesions of the central nervous system" (full-time course)

Etiology. Pathogenesis. Classification. Clinic. Diagnostics. Differential diagnosis. Treatment of perinatal lesions of the central nervous system in newborns from the standpoint of evidence-based medicine. Prevention. Prognosis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films on the specified pathology) with further discussion. In addition, when studying this topic, mastering practical skills of palpation, percussion and auscultation at the patient's bedside in specialized departments of the medical institution (according to the agreement on cooperation between the medical institution and the university) are expected. Interpretation of the results of laboratory and instrumental examination methods. Treatment schemes

Topic 3. Premature babies. Children with intrauterine growth retardation.

pr.tr.7 "Premature newborns. Peculiarities of adaptation of premature newborns" (full-time course)

Peculiarities of providing care to premature newborns. Etiological factors of prematurity. Anatomical and physiological features. Degrees of morphological and neuro-functional maturity. Peculiarities of adaptation of premature newborns and maladaptation syndromes. children The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films with the main clinical manifestations of prematurity in children) with further discussion. work in a simulation center to practice methods of feeding premature newborns

pr.tr.8 "Children with intrauterine growth retardation" (full-time course)

Intrauterine growth retardation: Intrauterine development delay: etiology, postnatal diagnosis, features of early neonatal adaptation. The study of this topic involves theoretical work in the classroom. In addition, in the study of this topic, cases are foreseen, in the absence of quarantine restrictions, work at the patient's bedside in specialized departments medical institution (according to the cooperation agreement between the medical institution and the university). Patient treatment plan.

Topic 4. Hemolytic disease of newborn. Hemorrhagic disease of newborn

lect.2 "Jaundice of newborns" (full-time course)

Etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. Teaching is conducted in the form of multimedia lectures (in case of quarantine - in online mode).

pr.tr.9 "Neonatal jaundice" (full-time course)

Etiology of neonatal jaundice, disease symptoms, types of jaundice, breast milk jaundice, glucuronyl transferase deficiency, diagnosis. Treatment of jaundice from the standpoint of evidence-based medicine. The mechanism of action of phototherapy. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion.

pr.tr.10 "Hemolytic disease of newborns" (full-time course)

Hemolytic disease of newborns: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis. Erythrocyte antigen systems of human blood. Clinical and laboratory criteria of anemic, icteric and edematous forms of hemolytic disease of newborns. Criteria for the degree of severity of hemolytic disease of newborns. Stages of the course of bilirubin encephalopathy. Methods of conservative therapy of hemolytic disease of newborns. Indications for replacement blood transfusion. Technique of operation and its possible complications. The study of this topic involves theoretical work in the classroom, clinical cases. Work at the patient's bedside, interpretation of obtained clinical, laboratory and biochemical data in specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

pr.tr.11 "Hemorrhagic disease of newborns" (full-time course)

Hemorrhagic disease of newborns: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment and prevention. Features of the hemostasis system in newborns. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion. In addition, the study of this topic includes clinical cases, improvement of mastering the skills of palpation, percussion and auscultation of equipment at the patient's bedside in a specialized department (in the absence of quarantine restrictions), treatment plan

Topic 5. Neonatal respiratory distress syndrome (RDS). Neonatal pneumonia

lect.3 "Respiratory distress syndrome of newborns" (full-time course)

Respiratory distress syndrome of newborns: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis and treatment

pr.tr.12 "Respiratory distress syndrome of newborns" (full-time course)

Respiratory distress syndrome of newborns: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis. The concept of the surfactant system of the lungs. Factors in the development of the syndrome of respiratory disorders in newborns. Mechanism of development of hyaline membranes. Methods of antenatal prevention. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (watching films) with further discussion.

pr.tr.13 "Treatment of respiratory distress syndrome of newborns" (full-time course)

Treatment of respiratory distress syndrome of newborns from the standpoint of evidence-based medicine, prevention, prognosis. Respiratory support. Surfactant replacement therapy. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (watching films with methods of functional and instrumental research of the respiratory system (breath tests, chest x-ray, ultrasound, capnography, scintigraphy, spirometry) with further discussion. In addition, during the study this system includes role-playing games. Interpretation of the data obtained from the study of the external breathing function (spirometry), X-ray and ultrasound examination of the chest organs in specialized 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 main disease and providing emergency care .

pr.tr.14 "Neonatal pneumonia" (full-time course)

Neonatal pneumonia: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis. Features of the course of pneumonia in newborns depending on the route of infection and etiology. Principles of treatment of pneumonia in newborns. Features of etiotropic therapy. Prevention, prognosis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films on the specified pathology) with further discussion. In addition, when studying this topic, mastering practical skills of palpation, percussion and auscultation at the patient's bedside in specialized departments of the medical institution (according to the agreement on cooperation between the medical institution and the university) are expected. Interpretation of the results of laboratory and instrumental examination methods.

Topic 6. Perinatal infections

pr.tr.15 "Intrauterine infections of newborns (TORCH – infections)" (full-time course)

TORCH-infections of newborns: etiology, pathogenesis, clinic, diagnosis, differential diagnosis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion. In addition, the study of this topic includes role-playing games, improvement of mastering the skills of palpation, percussion and auscultation of equipment at the patient's bedside in a specialized department (in the absence of quarantine restrictions), drawing up an examination plan with further interpretation. The study of this topic involves theoretical work in the classroom, application virtual simulation (watching films demonstrating clinical manifestations of major diseases and syndromes) with further discussion. In addition, the study of this topic includes clinical cases, improvement of mastering the skills of palpation, percussion and auscultation of the patient's bedside equipment in a specialized department (in the absence of quarantine restrictions), examination planning. Interpretation of the results of laboratory and instrumental examination methods.

pr.tr.16 "Treatment of intrauterine infections in newborns (TORCH-infections)" (full-time course)

Principles of treatment of intrauterine infections from the standpoint of evidence-based medicine. Etiotropic and immunotherapy. Prevention. Forecast. The study of this topic involves theoretical work in the classroom. In addition, when studying this topic, clinical cases are expected, in the absence of quarantine restrictions, work at the patient's bedside in specialized departments of a medical institution (according to the cooperation agreement between the medical institution and the university). Patient treatment plan.

pr.tr.17 "Generalized bacterial infection of newborns (sepsis)" (full-time course)

Definition of the term "neonatal sepsis". Development factors. Classification and etiology of neonatal sepsis. Clinical and laboratory criteria of neonatal sepsis. Principles of treatment from the standpoint of evidence-based medicine and prevention of neonatal sepsis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films with the main clinical manifestations of sepsis in children) with further discussion. Clinical cases.

Topic 7. Anemia in children (deficient, posthemorrhagic, hemolytic, due to hematopoiesis)

pr.tr.18 "Iron deficiency anemia in children" (full-time course)

Iron deficiency anemia in children. Etiology, clinic, diagnosis, differential diagnosis. The study of this topic involves theoretical work in the classroom, role-playing games. In addition, the study of this system involves clinical cases. Work at the patient's bedside, interpretation of received clinical, laboratory, biochemical data in specialized departments of the medical institution (according to the agreement on cooperation between the medical institution and the university).

pr.tr.19 "Treatment of iron deficiency anemia" (full-time course)

Treatment from the standpoint of evidence-based medicine and prevention of iron deficiency anemia in children. The study of this topic involves theoretical work in the classroom. In addition, the study of this topic involves clinical cases, work in the hematology department (in the absence of quarantine restrictions), examination and treatment plan.

Topic 8. Hemorrhagic diseases in children.

pr.tr.20 "Hemophilia in children" (full-time course)

Hemophilia A, B, C. Etiology, pathogenesis, clinic, diagnosis. Prognosis in children. Emergency aid. Substitute therapy in the provision of emergency care to patients with hemophilia from the standpoint of evidence-based medicine. Antihemophilic drugs (concentrates of blood coagulation factors, fresh frozen plasma) and their use. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion. In addition, the study of this topic includes clinical cases, improvement of mastering the skills of palpation, percussion, and auscultation of bedside equipment in a specialized department (in the absence of quarantine restrictions), an examination plan with further interpretation of the obtained results of biochemical blood tests.

pr.tr.21 "Thrombocytopenia (thrombocytopenic idiopathic purpura) in children" (full-time course)

Thrombocytopenic purpura in children. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis. Treatment of thrombocytopenic purpura from the standpoint of evidence-based medicine, prognosis. Emergency care for bleeding. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion. In addition, the study of this topic includes clinical cases, improvement of mastering the skills of palpation, percussion, and auscultation of bedside equipment in the hematology department (in the absence of quarantine restrictions), an examination plan with further interpretation of the obtained results of biochemical blood tests.

pr.tr.22 "Hemorrhagic vasculitis in children" (full-time course)

Hemorrhagic vasculitis in children. Etiology, pathogenesis, clinical forms, diagnosis, differential diagnosis. Treatment of hemorrhagic vasculitis from the standpoint of evidence-based medicine. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion. In addition, the study of this topic includes clinical cases, improvement of mastering the skills of palpation, percussion and auscultation while working at the patient's bedside in the hematology department (in the absence of quarantine restrictions), an examination plan with further interpretation of the obtained results of biochemical blood tests.

Topic 9. Leukemias and lymphomas in children

pr.tr.23 "Leukemias and lymphomas in children" (full-time course)

Leukemia in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention, prognosis. Lymphomas in children: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment from the standpoint of evidence-based medicine, prevention, prognosis. The study of this topic involves a theoretical study in the classroom, interpretation of the obtained data of laboratory tests, endoscopic examination, x-ray and ultrasound examination of the child's internal organs in the hematology department of the medical institution (according to the agreement on cooperation between the medical institution and the university). Work at the patient's bedside.

Topic 10. Diabetes mellitus in children.

pr.tr.24 "Diabetes mellitus" (full-time course)

Diabetes. Epidemiology, etiology, pathogenesis, diagnostics. Diet therapy of diabetes. Peculiarities of the diet for compensated and uncompensated diabetes in children. Treatment of diabetes from the position of evidence-based medicine. Insulin therapy. Studying this topic involves working in a classroom. Work in the somatic department of the institution (according to the cooperation agreement between the medical institution and the university). Work at the patient's bedside.

pr.tr.25 "Diabetes mellitus (comas)" (full-time course)

Hypoglycemic coma, hypoglycemic conditions. Clinic, diagnosis, treatment from the standpoint of evidence-based medicine. The study of this topic involves theoretical work in the classroom, solving situational problems. In the absence of quarantine restrictions, work in the departments of the medical institution (according to the cooperation agreement between the medical institution and the university). Ketoacidotic conditions, diabetic (hyperketonemic) coma. Clinic, diagnosis, treatment from the standpoint of evidence-based medicine. The study of this topic involves theoretical work in the classroom, solving situational problems. In the absence of quarantine restrictions, work in the departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 11. Diseases of thyroid gland in children

pr.tr.26 "Diffuse and nodular toxic goiter" (full-time course)

Diffuse toxic goiter in children. Etiology, pathogenesis, clinic, diagnosis of thyrotoxicosis in children. Treatment from the standpoint of evidence-based medicine, prognosis. The study of this topic involves theoretical work in the classroom, interpretation of laboratory research data, x-ray and ultrasound examination of the child's internal organs in the somatic department of the medical institution (according to the cooperation agreement between the medical institution and the university). Work at the patient's bedside.

pr.tr.27 "Hypothyroidism in children" (full-time course)

Etiology, pathogenesis, clinic, early diagnosis. Treatment from the standpoint of evidence-based medicine, prognosis. Genetics and diagnosis of congenital hypothyroidism. The study of this topic involves theoretical work in the classroom, interpretation of laboratory research data, x-ray and ultrasound examination of the child's internal organs in the somatic department of the medical institution (according to the cooperation agreement between the medical institution and the university). Work at the patient's bedside.

Topic 12. Diseases of hypothalamic-pituitary system.

pr.tr.28 "Endocrine and non-endocrine obesity" (full-time course)

Obesity in children. Etiology, clinical forms. Principles of complex treatment of various clinical forms of obesity in children. Prevention. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion. In addition, the study of this topic includes clinical cases, improvement of mastering the skills of palpation, percussion and auscultation while working at the patient's bedside in the somatic department (in the absence of quarantine restrictions), an examination plan with further interpretation of the obtained results of biochemical blood tests.

pr.tr.29 "Growth disorders in children" (full-time course)

Pituitary nanism. Causes, clinic, differential diagnosis. Treatment from the standpoint of evidence-based medicine and prognosis. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion. In addition, the study of this topic involves role-playing games, improving the mastery of palpation, percussion and auscultation skills while working at the patient's bedside in the somatic department (in the absence of quarantine restrictions), drawing up an examination plan with further interpretation of the obtained results of biochemical blood tests.

Topic 13. Congenital adrenogenital syndrome

pr.tr.30 "Congenital adreno-genital syndrome" (full-time course)

Genetics, clinic and diagnosis of adreno-genital syndrome in children. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (viewing films demonstrating the clinical manifestations of the main diseases and syndromes) with further discussion. In addition, the study of this topic includes clinical cases, improvement of mastering the skills of palpation, percussion and auscultation while working at the patient's bedside in the somatic department (in the absence of quarantine restrictions), an examination plan with further interpretation of the obtained results of biochemical blood tests.

<p>pr.tr.31 "Treatment of congenital adreno-genital syndrome" (full-time course)</p> <p>Treatment of adreno-genital syndrome in children. Emergency care for the silvtrasing form of adreno-genital syndrome. The study of this topic involves theoretical work in the classroom, interpretation of laboratory research data, x-ray and ultrasound examination of the child's internal organs in the somatic department of the medical institution (according to the cooperation agreement between the medical institution and the university). Work at the patient's bedside.</p>
<p>Topic 14. Defence of case history</p>
<p>pr.tr.32 "Defence of case history" (full-time course)</p> <p>Defence of medical history. Educational case history, based on clinical curation of patients with registration of examination data and additional research methods, for the purpose of checking and substantiating the diagnosis and prescribing a treatment regimen.</p>
<p>Topic 15. Tests control</p>
<p>pr.tr.33 "Tests control" (full-time course)</p> <p>Computer testing</p>
<p>Topic 16. Defense of practical skills and manipulation</p>
<p>pr.tr.34 "Defense of practical skills and manipulations" (full-time course)</p> <p>Defense of practical skills and manipulations</p>
<p>pr.tr.35 "Defense of practical skills and manipulations" (full-time course)</p> <p>Defense of practical skills and manipulations</p>
<p>Topic 17. Practically oriented exam</p>
<p>assessm.1 "Exam" (full-time course)</p> <p>Passing a practice-oriented exam</p>

9. Teaching methods

9.1 Teaching methods

Course involves learning through:

TM1	Lecture teaching
TM2	Case-based learning
TM3	Team Based Learning
TM4	Research Based Learning
TM5	Practical training
TM6	Self-study
TM7	Electronic learning

The discipline is taught using modern teaching methods (CBL, TBL, RBL), which contribute not

only to the development of professional abilities, but also encourage creative thinking.

Acquisition of soft skills by students is carried out during the entire period of studying the discipline. The ability for analytical and critical thinking, teamwork, perseverance is formed during team-, practice- and case-oriented training, knowledge and understanding of the subject area is acquired during lectures, self-study. E-learning stimulates the ability to use information technologies. Research-based learning encourages the development of certainty and persistence in tasks and responsibilities.

9.2 Learning activities

LA1	Defence of case history
LA2	Interpretation of laboratory (clinical blood, urine, biochemical blood analysis, immunological studies, etc.) and instrumental examination methods (ECG, echocardiography, ultrasound, CT, radiography, etc.)
LA3	Preparation for practical classes
LA4	Analysis of clinical cases
LA5	Practical work with the patient in specialized departments of the hospital.
LA6	Electronic learning in systems (Google Meet, Zoom, MIX.sumdu.edu.ua)
LA7	Preparation for the exam.
LA8	Individual research project (student research paper, article, theses, etc.)
LA9	Work with textbooks and relevant information source
LA10	Practice of practical skills in a simulation center
LA11	Implementation of a group practical task
LA12	Interactive lectures

10. Methods and criteria for assessment

10.1. Assessment criteria

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)	$0 \leq RD < 119$

10.2 Formative assessment

	Description	Deadline, weeks	Feedback

<p>FA1 Peer assessment</p>	<p>Partnership interaction aimed at improving results educational activity by comparing one's own current level of success with previous indicators. Provides an opportunity to analyze one's own educational activities</p>	<p>During the entire period of studying the discipline</p>	<p>Adjustment of learning approaches together with students, taking into account the results of the assessment</p>
<p>FA2 Consulting the teacher during the writing of the medical history</p>	<p>Writing a medical history involves demonstrating the ability to work with a patient, consolidating practical skills in physical examination of a patient, evaluating and analyzing medical documentation, establishing a clinical diagnosis with elements of differential diagnosis, prescribing treatment. Defense of the medical history, when the student must provide answers to questions about the patient he treated, the causes and provoking factors of the disease, modern methods of diagnosis and treatment</p>	<p>Writing during the cycle, defense - in accordance with the calendar and thematic plan</p>	<p>Counseling the teacher during the writing of the case history with oral comments. The applicant receives a grade for writing a medical history (5 points maximum) and defense (5 points maximum)</p>
<p>FA3 Final testing</p>	<p>A method of effective verification of the level of assimilation of knowledge, abilities and skills from an educational discipline. Testing allows you to check the results of training after completing the discipline</p>	<p>At the last class on discipline</p>	<p>The maximum number of points for the test is 10 points, provided that 100% of the answers are correct. The minimum score for successfully passing the tests is 6 points (60% of correct answers)</p>
<p>FA4 Counseling of the teacher during the preparation of an individual research project (report at a conference, competition of scientific works).</p>	<p>An important factor in the formation of professional qualities future specialists is the research work of students. Involvement of the latter in research activities contributes to the formation of their scientific worldview, industriousness, work capacity, initiative, etc.</p>	<p>During the entire period of studying the discipline</p>	<p>Teacher's oral comments. The student is given additional incentive points (from 5 to 10), depending on the type of research project</p>

<p>FA5 Instructions of the teacher in the process of performing practical tasks</p>	<p>Methods of pedagogic control over the professional activity of the applicants are revealed as an instruction. Effectiveness by observing all stages of practical tasks. The effectiveness of the formation of the necessary practical skills and abilities depends on the level of formation of practical competence</p>	<p>During the entire period of studying the discipline</p>	<p>Counseling of students in working with a standardized patient, direct and indirect observation of the work of applicants "at the patient's bedside" with further determination of the level of practical training</p>
<p>FA6 The survey and the teacher's oral comments on his results</p>	<p>This provides an opportunity to identify the state of the students' educational experience in accordance with the set goals, to find out the prerequisites for the state of formation of the obtained results, the causes of difficulties, to adjust the learning process, to track the dynamics of the formation of learning results and to predict their development</p>	<p>During the entire period of studying the discipline</p>	<p>According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants</p>
<p>FA7 Solving clinical cases</p>	<p>The case method makes it possible to reveal and form the qualities and abilities of medical students necessary for further work, forms clinical thinking, analytical abilities, independence in decision-making, communication, skills for working with a sufficiently large amount of information.</p>	<p>During the entire period of studying the discipline</p>	<p>Assessment of the student's ability to think clinically, justify their decisions, clearly express their opinions, determine the level of theoretical training, which is reflected in the corresponding assessment</p>

<p>FA8 Tests (automated tests) for monitoring educational achievements</p>	<p>A method of effective verification of the level of assimilation of knowledge, abilities and skills from each subject of an educational discipline. Testing allows you to check the assimilation of educational material from each subject</p>	<p>During the entire period of studying the discipline</p>	<p>The student must provide 60% of the correct answers, which is an admission to the practical part of the lesson</p>
<p>FA9 The task of assessing the level of theoretical training</p>	<p>Assessment of acquired theoretical knowledge on the subject of the discipline. It is conducted at each practical session in accordance with the specific goals of each topic based on a comprehensive assessment of the student's activity, which includes level control theoretical training, independent work according to the thematic plan</p>	<p>During the entire period of studying the discipline</p>	<p>Feedback is aimed at supporting students' independent work, identifying shortcomings and assessing the level of acquired theoretical knowledge</p>
<p>FA10 Practicing practical skills on various mannequins and simulators</p>	<p>Practicing practical skills on various mannequins and simulators</p>	<p>During the entire period of studying the discipline. During the entire period of study. At the last</p>	<p>Successful implementation of practical skills in the discipline is admission to the exam. The maximum number of points - 20, minimum - 12</p>
<p>FA11 Discussions in focus groups</p>	<p>The method makes it possible to involve all participants in the process of discussion and justification of one's own opinion through multilateral communication, to develop the ability to conduct a professional discussion, to cultivate respect for colleagues and the ability to generate alternative ideas and proposals.</p>	<p>During the entire period of studying the discipline.</p>	<p>Assessment of the student's ability to work in a team, ability to justify their decisions, determination of the level of theoretical training, which is reflected in the corresponding assessment</p>

FA12 Tests (automated tests) for monitoring educational achievements	A method of effective verification of the level of assimilation of knowledge, abilities and skills from each subject of an educational discipline. Testing allows you to check the assimilation of educational material from each subject	During the entire period of studying the discipline	The student must provide 60% of the correct answers, which is an admission to the practical part of the lesson
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10.3 Summative assessment

	Description	Deadline, weeks	Feedback
SA1 Final control: exam	Passing a practical-oriented exam. Students who have successfully mastered the material of the discipline, passed practical skills and final computer testing, and defended their medical history are allowed to take the exam.	According to the schedule	Student can get 80 points for the exam. Minimum points a student must receive is 48 points
SA2 Assessment of medical history writing and defense	Writing a medical history involves demonstrating the ability to work with a patient, consolidating the practical skills of physical examination of a patient, evaluating and analyzing medical documentation, establishing a clinical diagnosis with elements of differential diagnosis, prescribing treatment. Anticipated defense of medical history, when the student must provide answers to questions about the patient he treated, the causes and provoking factors of the disease, modern methods of diagnosis	According to calendar and thematic plan	A student can get a maximum of 10 points. 5 points are awarded for writing, 5 points for defense. The minimum number of points for a successful defense is 6 points
SA3 Final testing	A method of effective verification of the level of assimilation of knowledge, abilities and skills from an educational discipline. Testing allows you to check the results of training during the cycle and determine the level of knowledge at the end of the discipline.	Final computer test at the end of the course (10 points)	It is an admission to the exam
SA4 Assessment of performance of practical skills and manipulations	Comprehensive study of the practical component of the programs educational disciplines in a safe simulation environment for students. It provides an opportunity to learn skills from a variety of emergency situations	At the last class in the discipline, the student must successfully complete a list of practical skills	It is mandatory for admission to the exam. Maximum quantity 20 points, minimum 12

SA5 Current evaluation of the level of theoretical and practical training	Includes oral interview, interpretation of laboratory and instrumental methods of examination, objective structured clinical examination of the patient, solution of clinical individual and group cases, ongoing testing. Students who are involved in research activities have the opportunity to present the results of their own research at conferences, student research competitions, etc. (incentive activities, additional points)	During the entire period of studying the discipline.	It is held in every class. The performance result affects the comprehensive assessment for the practical class
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Form of assessment:

	Points	Minimum points	Можливість перескладання з метою підвищення оцінки
9 semester	200 scores		
SA1. Final control: exam	80		
answer to theoretical questions (3x15)	45	25	No
answer to the question of providing emergency care	20	12	No
answer to the question of practical skills	15	9	No
SA2. Assessment of medical history writing and defense	10		
	10	5	No
SA3. Final testing	10		
	10	6	No
SA4. Assessment of performance of practical skills and manipulations	20		
	20	12	No
SA5. Current evaluation of the level of theoretical and practical training	80		
Oral interview, performance of group case, clinical case, assessment, objective structured clinical examination, interpretation of laboratory and instrumental examination results	80	48	No

Student receives a maximum of 5 points for each practical lesson (points are awarded in the traditional 4-point system). At the end of the academic year, the student's arithmetic average is calculated. The maximum number of points that a student can receive in practical classes during the academic year is 80. The number of points of a student is calculated using the formula of multiplying by the arithmetic average and dividing by 5. The following points are assigned for writing a medical history: "5" - 5 points, "4" - 4 points, "3" - 3 points, "2" - 0 points. Medical history protection: "5" - 5 points, "4" - 4 points, "3" - 3 points, "2" - 0 points. In general, the student can receive a maximum of 10 points for the medical history, the minimum required point is 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. A mandatory condition for admission to the exam is the successful completion of the list of practical skills in the last lesson of the discipline. The maximum number of points that a student can receive is 20 points, the minimum is 12 points. The maximum number of points for the current educational activity of the student is 120. The student is admitted to the exam provided that the requirements of the educational program are met and if he has scored at least 72 points for the current educational activity: 48 points during practical classes, 6 points for medical history, 6 points for testing and 12 points for performing practical skills and manipulations. The practice-oriented exam is held according to the schedule during the session. Exam tickets contain 3 theoretical questions on various topics and cover all sections of the academic discipline (15 points each), 1 practical task (15 points) and questions on providing emergency care (20 points). The exam is credited to the student if he scored at least 48 points out of 80. Encouraging points are added to the grade in the discipline for the implementation of an individual research project (defense of the student thesis 10 points, presentation at the conference, poster presentation at the conference, theses of the reports - 5 points). The total score for the discipline cannot exceed 200 points. The possibility of re-crediting the points obtained under the system of non-formal education is provided in accordance with the Regulations.

11. Learning resources

11.1 Material and technical support

MTS1	Information and communication systems
MTS2	Library funds, archive of radiographs, electrocardiograms, computer tomograms, results of laboratory examination methods
MTS3	Computers, computer systems and networks
MTS4	Phantoms of newborn children, dummies, simulation center equipment
MTS5	Non-commercial Enterprise of Sumy Regional Council «Regional Children Clinical Hospital»
MTS6	Multimedia, video and sound reproducing, projection equipment (video cameras, projectors, laptop screens)
MTS7	Software (to support distance learning, virtual patients, etc.)
MTS8	Medical equipment (electrocardiograph, height meter, scales, tonometer, phonendoscope, etc.)

11.2 Information and methodical support

Essential Reading	
1	Neonatology [Текст] : lecture notes / O. K. Redko, V. O. Petrashenko, A. M. Loboda. — Sumy : Sumy State University, 2021. — 189 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	Methodical Instructions to practical lessons on the topic "Hemorrhagic Diseases in Children on the discipline "Pediatrics" [Электронный ресурс] : for students of specialty 222 "Medicine" of full-time course of study / I. I. Shkolna, V. O. Petrashenko, A. M. Loboda. — Sumy : Sumy State University, 2022. — 30 p.
4	Methodical instructions for practical lessons on the topic "The diseases of hypothalamic pituitary system and sexual glands in children" on the discipline "Pediatrics" [Электронный ресурс] : for stud. of spec. 222 "Medicine" of full-time training / O. K. Redko, A. M. Loboda, V. O. Petrashenko. — Sumy : Sumy State University, 2023. — 127 p
Supplemental Reading	
1	Respiratory distress in newborns : methodical instructions for practical lessons on the subject "Pediatrics" [Электронный ресурс] : for the stud. of the spec. 222 "Medicine" full-time education / S. V. Popov, O. K. Redko. — Sumy : Sumy State University, 2022. — 15 p
2	USMLE Step 2 CK: Pediatrics: Lecture Notes / Editors W.G. Cvetnic, E. Pino. — New York : Kaplan, 2019. — 281 p
3	The Standards of Practical Skills in Neonatology : study guide / Ye. Ye. Shunko, A. M. Loboda, I. V. Tarasova etc. ; eds: Ye.Ye. Shunko, A.M. Loboda. — Sumy : Sumy State University, 2018. — 315 p.
4	Nelson Textbook of Pediatrics [Текст]. V.1 / R. M. Kliegman, B. Stanton, J. Geme, N. Schor ; editor Behrman R.E. — 20-th ed. — Philadelphia : Elsevier, 2016. — 1129 p.