Course description

Part 2

Other useful course information

13. Department conducting the course, address, e-mail address:

A. Department of Pediatrics
40-752 Katowice, ul. Medyków 16 / e-mail: klinikapediatrii@sum.edu.pl
B. Department of Pediatrics and Pediatric Endocrinology
40-752 Katowice, ul. Medyków 16 / e-mail: endo_sk6@sum.edu.pl
C. Department of Pediatric Cardiology
40-752 Katowice, ul. Medyków 16 / e-mail: jkusa@sum.edu.pl
D. Department of Neonatology and Neonatal Intensive Care
40-752 Katowice, ul. Medyków 16 / e-mail: kitipn@sum.edu.pl

14. Name of the person responsible for the course / course coordinator:

Course coordinator: Prof. Aneta Gawlik-Starzyk, MD, PhD

Heads of Departments:

A. Assoc. Prof. Sabina Więcek, MD, PhD
B. Prof. Aneta Gawlik-Starzyk, MD, PhD
C. Prof. Jacek Kusa, MD, PhD
D. Prof. Iwona Maruniak-Chudek, MD, PhD

15. Prerequisites in terms of knowledge, skills and other competencies:

- Basic knowledge of anatomy, physiology, and biochemistry of developmental age.
- The student is required to be theoretically prepared according to the topics of lectures, classes, and seminars, based on the recommended literature.
- Basic knowledge of epidemiology, hygiene principles, and occupational safety and health is required.
- In subsequent years of study, knowledge is gradually expanded according to the curriculum for earlier years.

16. Group size	In accordance with the Regulation of the Rector of SUM
17. Teaching materials / resources	• Conversational lecture / e-learning • Lectures / e-learning • Presentations / e-learning • Practical bedside exercises • Student's personal equipment: stethosco
18. Location of classes	At the locations of the units conducting classes (points 13 A–D) and the Center for Medical Education and Simulation
19. Place and time of consultations	At the units conducting classes (points 13 A–D), by individual appointment via the department office (e-mail or phone contact)

20. Learning outcome code

Subject-specific learning outcomes	Subject-specific learning outcomes	Reference to learning outcomes in (underline where applicable): official curriculum standards / approved by the Senate of SUM

In terms of knowledge:		
C_K01	Knows the environmental and epidemiological determinants of the most common diseases.	E.W1
C_K02	Knows the principles of nutrition for healthy and ill children, including breastfeeding, immunizations, and health check-ups for children.	E.W2
C_K03	Knows the causes, principles of diagnosis, and therapeutic management of the most common diseases and symptoms in children, including: 1. fever, dyspnea, rickets, tetany, seizures, 2. heart defects, myocarditis, endocarditis, pericarditis, cardiomyopathies, arrhythmias, heart failure, hypertension, fainting, 3. acute and chronic diseases of upper and lower respiratory tracts, congenital respiratory defects, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, anaphylaxis, angioedema, 4. anemia, bleeding disorders, bone marrow failure syndromes, childhood cancers including solid tumors, 5. acute and chronic abdominal pain, vomiting, diarrhea, constipation, GI bleeding, peptic ulcer disease, IBD, pancreatic diseases, cholestasis, liver diseases, and congenital/acquired GI anomalies, 6. urinary tract infections, congenital defects of the urinary system, nephrotic syndrome, nephrolithiasis, acute and chronic kidney failure, nephritis, systemic kidney diseases, voiding disorders, vesicoureteral reflux, 7. growth disorders, thyroid/parathyroid diseases, adrenal disorders, diabetes, obesity, pubertal and gonadal dysfunction, 8. cerebral palsy, encephalitis, meningitis, epilepsy, 9. common childhood infectious diseases, 10. genetic syndromes, 11. connective tissue diseases, rheumatic fever, juvenile arthritis, lupus, dermatomyositis.	E.W3
C_K04	Knows issues related to child abuse and sexual exploitation, intellectual disability, and behavioral disorders – psychosis, addictions, eating and excretion disorders.	E.W4
C_K05	Knows the most common life-threatening conditions in children and the principles of emergency care	E.W6
C_K06	Knows the consequences of improper nutrition, including starvation, overeating, unbalanced diet, and disorders of digestion and absorption.	C.W50
C_K07	Knows the consequences of vitamin and mineral deficiencies and excess in the body.	C.W48

C_K08	Knows the principles of conducting scientific, observational, experimental, and in vitro research relevant to medical progress.	B.W29
C_K09	Knows the role of verbal and non-verbal communication in interacting with patients and the concept of trust.	D.W6
C_K10	Knows the main concepts, theories, and ethical principles forming a framework for interpreting and analyzing moral-medical issues.	D.W16
C_K11	Knows the principles of evidence-based medicine.	D.W23
In terms of skills:		
C_S01	Able to take a medical history from a child and their family.	E.U2
C_S02	Able to perform a physical examination of a child at any age.	E.U4
C_S03	Able to perform a basic hearing and visual field test, and otoscopic examination	E.U6
C_S04	Able to assess the general condition, consciousness, and awareness of the patient.	E.U7
C_S05	Able to assess the Apgar score and maturity of the newborn, and examine neonatal reflexes.	E.U8
C_S06	Able to compare anthropometric measurements and blood pressure with centile charts.	E.U9
C_S07	Able to assess the stage of sexual maturation	E.U10
C_S08	Able to perform health screening examinations	E.U11
C_S09	Able to perform differential diagnosis of common childhood illnesses.	E.U12
C_S10	Able to perform differential diagnosis of common childhood illnesses.	E.U13
C_S11	Able to recognize life-threatening conditions.	E.U14
C_S12	Able to recognize intoxication with alcohol, drugs, and other substances.	E.U15
C_S13	Able to plan diagnostic, therapeutic, and preventive procedures.	E.U16
C_S14	Able to analyze potential adverse drug reactions and interactions.	E.U17
C_S15	Able to personalize treatment guidelines when standard therapy is ineffective or contraindicated.	E.U18
C_S16	Able to qualify a patient for home or hospital treatment.	E.U20
C_S17	Able to interpret laboratory results and identify causes of deviations from the norm	E.U24
C_S18	Able to apply nutritional treatment, including enteral and parenteral nutrition.	E.U25
C_S19	Able to qualify patients for vaccination.	E.U27
C_S20	Able to collect and secure samples for laboratory diagnostics.	E.U28

C_S21	Able to perform basic medical procedures and interventions, including: 1. measuring body temperature (surface and core), pulse, non-invasive blood pressure; 2. monitoring vital signs using a cardiac monitor and pulse oximetry; 3. performing spirometry, oxygen therapy, assisted and mechanical ventilation; 4. inserting an oropharyngeal airway; 5. intravenous, intramuscular, subcutaneous injections; peripheral venous cannulation; venous and arterial blood sampling; capillary blood sampling; 6. taking swabs from the nose, throat, and skin; 7. urinary catheterization in females and males, gastric intubation, gastric lavage, enema; 8. resting electrocardiogram with interpretation, electrical cardioversion, defibrillation; 9. simple strip tests and blood glucose measurements.	E.U29
C_S22	Able to assist in the following procedures and interventions: 1. transfusion of blood and blood-derived products; 2. pleural cavity drainage; 3. pericardial puncture; 4. peritoneal cavity puncture; 5. lumbar puncture; 6. fine needle aspiration biopsy; 7. skin tests; 8. intradermal and scarification tests and interpret the results.	E.U30
C_S23	Able to plan specialist consultations.	E.U32
C_S24	Able to implement basic treatment in acute poisonings.	E.U33
C_S25	Able to manage patient medical records.	E.U38
C_S26	Able to perform simple functional tests assessing human physiological regulation (stress and exercise tests) and interpret the data regarding basic physiological parameters.	B.U7
C_S27	Able to operate simple measuring instruments and assess measurement accuracy.	B.U9
C_S28	Able to use databases, including internet sources, and search for required information using available tools.	B.U10
C_S29	Able to explain the differences between prospective and retrospective, randomized and case-control studies, case reports, and experimental research, and rank them by evidence quality and reliability.	B.U12

C_S30	Able to design and conduct simple scientific studies, interpret results, and draw conclusions.	B.U13
In terms of social competencies:		
C_C01	Knows the key concepts, theories, and ethical principles that serve as a general framework for interpreting and analyzing moral-medical issues.	D.W16
C_C02	Knows the principles of teamwork	D.W18
C_C03	Able to build an atmosphere of trust during the entire diagnostic and treatment process.	D.U4
C_C04	Able to conduct conversations with adult patients, children, and their families using active listening and empathy techniques and discuss the patient's life situation.	D.U5
C_C05	Able to observe ethical standards in professional activities.	D.U13
C_C06	Able to recognize the ethical dimension of medical decisions and distinguish factual from normative aspects.	D.U14
C_C07	Able to respect patients' rights.	D.U15
C_C08	Able to demonstrate responsibility for self-development and sharing knowledge with others	D.U16

21. Forms and topics of classes	**Number of hours**
21.1. Lectures	
Year IV	**20,** including:
• Life-threatening conditions in pediatric gastroenterology	2
• Central nervous system tumors in children	2
• Acute kidney injury and chronic kidney disease. Rare syndromes in pediatric nephrology	2
• Autoimmune liver and biliary tract diseases in children	2
• Paraneoplastic syndromes and clinical masks of cancer in children	2
• Type 1 diabetes screening	3
• Preparing diabetic patients for surgery	2
• Lipid disorders and macroangiopathy	2
• Sports in diabetes	3
Year V	**20,** including:
• Selected aspects of diagnosis and treatment of congenital heart defects	4
• Acute heart failure in children	2
• Pulmonary hypertension in children	2
• Interventional treatment of congenital heart defects	2
• Introduction to neonatology. Newborn assessment after birth and basic neonatal procedures	2
• Health problems related to prematurity. Continued care of premature infants in outpatient settings	2
• Physical examination of the newborn, including congenital defects and maturity assessment	2

• Neonatal infections	2
• Most common health problems in newborns	2
21.2. Seminars	
Year IV	**20,** including:
• Food allergies and intolerances. Celiac disease and gluten-dependent syndromes	2
• Hematopoietic malignancies in children	2
• Acute conditions in pulmonology	2
• Emergencies in the Emergency Department	2
• Nephrotic syndrome	2
• Introduction to lifestyle medicine / general principles of healthy eating	2
• Diabetes in children: definition, etiopathogenesis, epidemiology. Genetics in diabetes	2
• General treatment principles, insulin therapy. Personal insulin pumps	2
• Acute metabolic disorders in diabetes	2
• Special situations. New technologies in diabetes	2
Year V	**20,** including:
• Congenital heart defects	4
• Cardiomyopathies, myocarditis, fainting	4
• Cardiac arrhythmias	4
• Newborn resuscitation	2
• Hyperbilirubinemia in the neonatal period.	1
• Neonatal emergencies	2
• Neonatal nutrition and nutritional treatment. Parenteral hydration. Management of fluid-electrolyte and acid-base disturbances	1
• Psychological care for parents of newborns who are ill or born prematurely	2
Year VI	**30,** including:
• Endocrine emergencies in children	2
• Puberty disorders. Congenital adrenal hyperplasia	2
• Inborn errors of immunity – basics of immunology and case presentation	2
• Autoinflammatory diseases, recurrent fever syndromes, PFAPA	1
• Kawasaki disease and PIMS	1
• Disorders of sex development	2
• Emergency Room clinical cases	2
• Pediatric fluid therapy principles	1
• Hyperandrogenism. PCOS	1
• Mandatory and recommended childhood vaccinations	2
• Short stature	2
• Differential diagnosis of lower respiratory tract infections in children	2
• Airway emergencies. Anaphylactic shock	2
• Thyroid diseases in children	2
• Calcium-phosphate metabolism disorders and bone metabolic diseases in children	2
• Obesity and its complications in children and adolescents	2

• Pediatric patient assessment in the Emergency Room – which child requires hospitalization? (alarm symptoms / red flags)	2
21.3. Labs	
Year IV	**50,** including:
• Food allergies and intolerances in children	2
• Inflammatory bowel disease. Celiac disease. Secondary malabsorption syndromes	2
• Cholestatic liver diseases	2
• Hematologic and lymphatic malignancies in children	2
• CNS tumors and other solid tumors in children	2
• Primary and secondary bone marrow failure, hemolytic and deficiency anemias, acute thrombocytopenias	3
• Acute upper and lower respiratory tract infections	2
• Chronic allergic and non-infectious respiratory diseases	2
• Cystic fibrosis	2
• Urinary tract malformations in children	2
• Urinary tract infections in children	2
• Nephrotic syndrome. Proteinuria	2
• Diabetic ketoacidosis	3
• Hypoglycemia	2
• Calculating insulin requirements	2
• Insulin dosing with personal insulin pump	2
• Insulin dosing with multiple daily injections	2
• Pharyngitis, laryngitis, pneumonia	2
• Gastroenteritis	2
• Fever in children	2
• Vomiting in children	2
• Dehydration in children	2
• Dyspnea in children	2
• Diabetes – diagnosis and initial management	2
Year V	**50,** including:
• Bedside pediatric cardiology exercises in the Department and Clinic of Pediatric Cardiology and in diagnostic labs: echocardiography, Holter ECG, stress test	24
• Newborn physical examination. Clinical assessment. Interpretation of interview data	8
• Neonatal resuscitation	4
• Interpretation of lab and imaging results, diagnostic and treatment planning. Case discussions	6
• Bedside pediatric exercises in the pediatric ward – clinical assessment, planning and interpreting additional tests and treatment in respiratory, gastrointestinal, and systemic connective tissue diseases. The role of the general pediatric ward in the health care system for children	8
Year VI	**90,** including:
• Diagnostics and treatment of patients with endocrine disorders - anamnesis and physical examination.	10
• Assessment of the child's psychosomatic development - weight, height, BMI, head circumference, chest circumference, plotting data on centile charts. Assessment of puberty on the Tanner scale.	4

• Differential diagnosis and treatment of current endocrine cases: thyroid, adrenal, parathyroid diseases, growth and puberty disorders, obesity and its complications.	6
• Work with patients in Specialist Clinics (endocrine and metabolic) - assessment of the growth rate of short/tall children, assessment of the effects of growth hormone treatment, analysis of the course of treatment of patients chronically treated for endocrine disorders.	4
• Work with patients in Specialist Clinics (endocrine and metabolic) - assessment of the growth rate of children with premature/delayed puberty, assessment of the effects of treatment with GnRH analogues, diagnosis, treatment and care for patients with obesity.	4
• Making a pediatric diagnosis based on a subjective and objective examination - diagnostic procedures, differential diagnosis.	7
• Workshops - principles of conducting fluid therapy in children - determining daily requirements, principles of electrolyte replenishment.	5
• Performing standard medical procedures (measuring body temperature, measuring heart rate, measuring blood pressure, monitoring vital signs using a cardiomonitor, pulseoximeter, collecting venous and capillary blood, performing intravenous and intramuscular injections, inserting a peripheral catheter, performing strip tests, measuring glucose concentration, taking swabs from the nose, throat, skin, blood cultures, catheterizing the urinary bladder, conducting an indicative otoscopic examination and field of vision).	5
• Recognizing and treating a patient poisoned with alcohol, narcotics, psychotropic substances	2
• Classes at the Center for Education and Medical Simulation.	12
• Abused child syndrome - types of violence (physical, psychological, sexual) - recognition and treatment.	1
• Preparation of presentation and case presentation.	4
• Diagnosis and treatment of a child with obesity - collecting an interview, physical examination, differential diagnosis, proposed therapeutic procedure.	3
• Assessment of the child's psychosomatic development - weight, height, BMI, head circumference, chest circumference, plotting data on centile charts. Assessment of maturation on the Tanner scale.	3
• Diagnosis and treatment of children with bone metabolism disorders - collecting an interview, physical examination, differential diagnosis, proposed therapeutic procedure, interpretation of the result of a densitometric test.	3
• Performing standard medical procedures (measurement of body temperature, heart rate, blood pressure, monitoring vital signs using a cardiomonitor, pulse oximeter, collection of venous and capillary blood, intravenous and intramuscular injections, placement of a peripheral catheter, performing strip tests, measuring glucose concentration, taking swabs	3

from the nose, throat, skin, blood cultures, catheterization of the urinary bladder, conducting an indicative otoscopic examination and field of vision). • Making a pediatric diagnosis based on a subjective and objective examination - diagnostic procedure, differential diagnosis. • Working with patients in the Metabolic Clinic - childhood obesity, lipid metabolism disorders, metabolic bone diseases • Patient management in a general pediatric ward - from the Emergency Room/SOR to post-hospital recommendations, review of the most common childhood diseases requiring emergency hospital treatment. The role and possibilities of planned diagnostics in children in a pediatric ward. Discussion of selected cases at the patient's bedside.	3 3 8

22. Literature

1. Nelson Textbook of Pediatrics
2. Lissauer: Illustrated Textbook of Pediatrics
3. Swaiman's Pediatric Neurology
4. UpToDate clinical resources

23. Assessment criteria – details

In accordance with the recommendations of regulatory bodies.
Passing the course – the student has achieved the intended learning outcomes.
Detailed course completion and grading criteria are included in the course regulations.
A. Continuous observation
B. Assessment of activity during exercises and seminars
C. Clinical case studies
D. Oral exam
E. Bedside problem-based evaluation