Course: Pediatrics  
Course Coordinator: Jelena Roganović, MD, PhD, Full Professor tenure  
Department: Department of Pediatrics  
Study program: Integrated Undergraduate and Graduate University Study of Medicine in English  
Study year: Fifth  
Academic year: 2021/22

SYLLABUS

Course description (a brief description of the course, general instructions, where and in what form the lessons are organized, necessary equipment, instructions for attendance and preparation for classes, student obligations, etc.):

Brief description of the course

The course „Pediatrics“ is a compulsory course in the 5th year of the Integrated Undergraduate and Graduate University Study of Medicine in English. It consists of 45 hours of lectures, 70 hours of seminars and 102 hours of practicals, a total of 217 hours (11 ECTS credits).

The objectives of the course are to acquire basic knowledge and skills in the field of pediatrics. Pediatrics is a medical discipline defined by the object of its interest - the child, from birth to maturity. The interest of pediatrics is focused on the child as an individual and on the whole pediatric population. The tasks of pediatrics are multiple: study and surveillance of the growth and development of children, protection and improvement of children’s health, prevention and cure of the diseases, and rehabilitation of disabled children. Pediatrics is based on the unitarist approach, combining three main components of children's health care - prevention, treatment and rehabilitation. The unique significance of pediatrics is that by delivering of health care to the youngest and most vulnerable age, it largely determines the health of future generations of adults.

The course provides specific knowledge and practical skills in pediatrics at the level required for a future primary health care practitioner, enabling students for basic diagnostic and therapeutic approaches to a sick child, initial management of the most common pediatric diseases, emergency care in pediatrics, disease prevention and environmental health hazards

Expected learning outcomes

I. Cognitive domain - Knowledge

1. Define tasks and unitarist approach to pediatrics
2. Describe the basic vital statistical terminology and organization of maternal and child health care
3. Recognize the importance of prevention in children's health
4. Associate main symptoms and signs of the most common childhood diseases with specific clinical conditions and syndromes
5. Select appropriate diagnostic procedures in the most common pathological conditions and diseases in pediatrics
6. Demonstrate the ability for treatment planning for the most common pediatric diseases
7. Analyze and evaluate the course of treatment, its efficacy and outcomes

II. Psychomotor domain - skills
1. Practice taking a pediatric history
2. Apply physical examination of the child
3. Recognize the normal physical growth and development of the child and disturbances in growth and development
4. Perform basic practical diagnostic and therapeutic procedures under the supervision (taking of biological samples, blood pressure measurement, body temperature measurement, procedures with a febrile child, application of drugs in children)
5. Master basic resuscitation skills of children and management of the most common emergencies in pediatrics
6. Set optimal therapeutic procedures for the most common diseases in children (with assistance)
7. Participate in a multidisciplinary approach to the pediatric patient

The content of the course is didactically divided into three parts:
1. Propedeutics in pediatrics,
2. General, social and preventive pediatrics, and
3. Special pediatrics.

1. Pediatric propedeutics is focused on the peculiarities of young age, pediatric history and physical examination of the child from infancy to the adolescence, and acquire the skills of communication with children and parents / guardians. The main contents are: Definition of pediatrics. Development and future of pediatrics in Croatia and in the world. Medical history in pediatrics. Physical examination of the child. Emotional development of the child. Medical psychology of the sick child. The most common psychological disorders of children and adolescents. Abused and neglected child.

2. General pediatrics includes theoretical and practical aspects of the physiology and pathology of growth and development, nutrition and nutritional disorders, assessment of nutritional status and nutritional disorders, and water, electrolyte, mineral, and acid-base disorders. Social pediatrics studies the


**Course structure**

Classes (lectures, seminars, practicals) are held in the 10th semester of the study for 8 weeks in a row, at the Department of Pediatrics, Clinical Hospital Center Rijeka – locality Kantrida. Lectures are held in the first two weeks, and seminars are held for a further 6 weeks.

The first 2 weeks are lectures that are common to all students. During lectures, students gain a theoretical overview of the main contents of the course. Seminars are problem-oriented, with case presentation. Students should regularly attend seminar classes (maximum 2 absences are allowed), and should theoretically prepare for seminars according to the attached schedule (interactive classes). Before the end of the course, student write group seminar paper according to the attached instructions. In case of unfavorable epidemiological situation, it is possible to hold classes online.

Practicals are held for 6 weeks. Students are divided into groups of 3-5 students per teacher. During the practicals, students directly learn skills and practical knowledge. The first 4 days are practicals in pediatric propedeutics, followed by a rotation of pediatric activities and teachers, giving to students the opportunity to learn about broad casuistic in pediatrics.

Students will be provided with all necessary information about classes on a regular basis through the Merlin platform.

**Assigned reading**

### Optional/Additional reading

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### COURSE TEACHING PLAN

List of lectures (with titles and explanations)

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<thead>
<tr>
<th>Lecture</th>
<th>Title</th>
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<tr>
<td><strong>P5. History in pediatrics</strong></td>
<td>Special aspects of the pediatric history. Appropriate pediatric history.</td>
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<tr>
<td><strong>P6. Physical examination in pediatrics</strong></td>
<td>Special aspects of the physical examination in pediatrics. Protocol for the physical exam of a child.</td>
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</table>
P11-12. Nutrition and eating disorders

P13. Homeostasis and water, electrolyte and acid-base disorders

P14-15. The newborn infant

P16. Premature infant

P17. Blood count in children

P18. Blood count in the most common childhood diseases
Blood count in the following pathological conditions: heart diseases, gastrointestinal diseases, liver diseases, kidney diseases, endocrine diseases, lung diseases, systemic connective tissue diseases. Anemia of chronic disease.

P19. Hereditary metabolic diseases

P20. Immunization
Immunity bases of active and passive immunization. Types of vaccines. Principles of of vaccination as a preventive program and mandatory childhood Vaccination Schedule in Croatia. Contraindications to vaccination. Adverse (post-vaccination) reactions. The most common indications for passive immunization.

P21-22. Respiratory diseases
P23-24. Cardiovascular diseases
Diagnosis of heart disease in children. Congenital heart diseases (CHD): the left-to-right shunt lesions (acyanotic) and the right-to-left shunt lesions (cyanotic). CHD without shunting. Inflammatory heart diseases. Cardiomyopathies. Disturbances of rate and rhythm of the heart.

P25. Blood diseases

P26. Anemia

P27-28. Immunity and immune disorders

P29-30. Allergic diseases

P31. Rheumatic diseases

P32-33. Diseases of the digestive system and liver

P34-35. Diseases of the endocrine system

P36-37. Diseases of the urinary system
P38-39. Malignant diseases

P40-41. Diseases of the central nervous system and neuromuscular disorders
History and examination in pediatric neurology. Diagnostic tests: lumbar puncture, electroencephalography, electromyoneurography, computed tomography and magnetic resonance imaging of the brain, ultrasound and doppler ultrasound, evoked potentials. Neurological symptoms and signs.

P42-43. The critically ill child

P44. Medical psychology of the child
Emotional development of the child. The importance and experience of being ill in childhood. Sick child and family. The child in the hospital. The most common psychological disorders of childhood and adolescence.

P45. When do we become adults?

LIST OF SEMINARS WITH EXPLANATION

S1. History
Basic principles of communication with parents and a sick child. Possible communication difficulties. Pediatric history protocol. Simulation of the history taking from the parent (heteroamnnesis) and from the older child and adolescent (direct anamnestic data)

S2. Physical examination of the child

S3. Recognition of the seriously ill child

Triage and stabilization of an acutely ill child - Triage scale and time allowed from arrival to the first medical examination. Clinical procedures and equipment to enable the stabilization of vitally compromised child. A safe transport of the critically ill child.

S4. Growth disorders

S5. Fever

S6. Cough
Cough - a symptom or a disease? Types of coughs. The most common causes of acute and chronic cough depending on the child age. Focused anamnestic questions to distinguish the type and cause of cough. Should a cough be treated and how?

S7. Respiratory disorders in neonates

S8. Perinatal brain damage
Perinatal asphyxia. Hypoxic-ischemic encephalopathy. Treatment and management - resuscitation and other treatment measures.

S9. Neonatal jaundice
S10. Infections in the newborn

S11. Premature infant

S12. Pneumonia

S13. Tuberculosis

S14. Acute inflammatory airway obstruction
The most common causes of severe acute airway obstruction in children. The difference between extrathoracic and intrathoracic airway obstruction. The specific inflammatory airway obstructions in children. Pharmacotherapeutic approach to viral croup and bronchiolitis.

S15. Childhood asthma

S16. Foreign bodies of the airway
S17. Cystic fibrosis
Cystic fibrosis as a rare systemic disease. Etiology and inheritance. Clinical presentation: gastrointestinal and respiratory tract manifestations and the most common complications. Diagnostic criteria for cystic fibrosis. Indications for sweat testing. Therapeutic approach.

S18. Cyanosis

S19. Chest pain

S20. Congenital heart disease

S21. Heart failure
Heart failure in children - etiology and pathophysiology. Clinical presentation depending on the cause and the age of the child. Therapeutic approach.

S22. The most common arrhythmias
Arrhythmias with normal heart rate (Sinus arrhythmia. Multifocal atrial tachycardia). Bradyarrhythmias. Tachyarrhythmias. Classification of antiarrhythmic drugs.

S23. Evaluation of a child with a bleeding diathesis

S24. Lymphadenopathy
25. Malignant diseases

S26. Emergencies in oncology

S27. Urticaria and angioedema


S29. Rheumatic diseases

S30. Infant nutrition

S31. Acute diarrhea

S33. Celiac disease

S34. Inflammatory bowel disease

S35. Approach to a child with suspected liver disease

S36. Emergencies in gastroenterology

S37. Obesity

S38. Diabetes mellitus
S39. Disorders of the thyroid gland

S40. Precocious puberty
Diagnosis of precocious puberty. Central (true) precocious puberty. Peripheral precocious puberty (Precocious pseudopuberty): Isosexual and heterosexual conditions. Incomplete precocious puberty.

S41. Disorders of sex development

S42. Diseases related to vitamin intake and metabolism

S43. Hypoglycemia

S44. Urinary tract infection

S45. Hematuria and proteinuria

S46. Acute kidney injury
Etiology and pathogenesis. Clinical presentation. Laboratory findings. Diagnosis and differential diagnosis. Treatment.
Etiopathogenesis of hemolytic-uremic syndrome. Clinical presentation. Laboratory findings. Treatment.

S47. Hypertension

S48. Headache

S49. Anomalies of the central nervous system

S50. Cerebral palsy and neurodevelopmental disorders

S51. Epileptic seizures, epilepsies and epileptic syndromes

S52. Occasional seizures

S53. Neuromuscular diseases
S54. Acute disorders of consciousness

S55. Shock

S56. Sepsis

S57. Infections of the central nervous system

S58. Environmental health hazards

S59. Chronically ill child
Chronic disease. The impact of chronic disease on the child, family and the community. Child's reactions to chronic disease. Perceived adjustment to chronic illness scale. Wrong attitudes of parents towards a child's chronic illness. Psychosocial adjustment to illness.

S60. Child abuse and neglect

S61-70. Seminar paper
Writing a group seminar paper. Each group selects one of the suggested topics (below), and the selection is according to the order of enrollment and the availability of free topics. Seminar papers are sent using official e-mail addresses via the Merlin e-learning system.
The seminar paper has the following parts:
- Title page: name of the faculty, academic year (at the top of the cover); title, names and surnames of the students (in the middle of the title page); place and year (at the bottom of the title page)
- Main body: introduction, main topic (if necessary, in several separate chapters), conclusion
- Appendices (if any)
- References (in alphabetical order)

The seminar paper should be written with one (same) font, 12-point font size. The line spacing should be 1.5 lines. The titles of chapters should be written in 14-point font size. The pages should be numbered.

Topics:
1. Puberty
2. Adolescent health problems
3. Injury control during childhood
4. Pediatric drug therapy
5. Pediatric pain management
6. Thrombotic disorders in children
7. Pediatric stroke syndromes
8. Vascular anomalies
9. A child with hematuria

**List of practicals with explanation**

The student acquires practical and communication skills that are the basis of pediatric competency. The overall content of the practicals is described, and the number of practicals does not indicate the order. Students will be involved in specific tasks, taking pediatric history and refer to them, suggest laboratory and imaging studies, discuss differential diagnosis and the treatment of patients.

<table>
<thead>
<tr>
<th>TITLE AND CONTENT OF PRACTICALS</th>
<th>NUMBER OF PRACTICALS</th>
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<td>P1 - P2 - P3 - P4</td>
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<tr>
<td><strong>Medical history</strong></td>
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<tr>
<td>Basic principles of the communication with parents and/or a sick child</td>
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<td>Medical history taking</td>
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<td>Identification of the data provider</td>
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<td>Main complaint</td>
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<td>Current illness</td>
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<td>History of growth and development</td>
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<td>Immunizations</td>
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<td>Past medical history</td>
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### Family history
Short summary of medical history

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<td><strong>Physical examination</strong></td>
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<td>Assessment of the general condition</td>
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<td>Assessment of the vital functions</td>
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<td>Consciousness</td>
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<td>Breathing</td>
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<td>Circulation</td>
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<td>Body temperature</td>
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<td>Blood pressure measurement</td>
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<td>Pulse palpation</td>
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<td>Examination of the skin and subcutaneous adipose tissue</td>
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<td>Bone age assessment</td>
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<td><strong>Diagnostic and therapeutic procedures</strong></td>
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<td>Collection of nasal and throat swabs</td>
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<td>Peripheral intravenous line placement</td>
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<tr>
<td>Administration of intramuscular and subcutaneous injections</td>
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<tr>
<td>Interpretation of blood count and biochemical findings</td>
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<td>Urinalysis</td>
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<td>Basic interpretation of electrocardiograms</td>
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<tr>
<td>Interpretation of X-rays of the thoracic organs, paranasal sinuses and abdomen</td>
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<td>Ultrasound examination of the brain, heart, lungs and abdomen (observation)</td>
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<td>Physical methods for treating fever in children and antipyretics</td>
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<td>Acute management of seizures</td>
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<td>Management of acute asthma</td>
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<td>Initial evaluation and management of poisonings</td>
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<td>Treatment of a child with hypoglycaemia</td>
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<tr>
<td>Assessment and management of diabetic ketoacidosis</td>
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<tr>
<td>Management of anaphylaxis</td>
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<td>Rational use of antibiotics in children</td>
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<tr>
<td><strong>Growth and development</strong></td>
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<tr>
<td>Assessment of physical growth and development</td>
</tr>
<tr>
<td>a. Anthropometric measurements (body weight, body length/height, head circumference), clinical assessment of development and distribution of subcutaneous adipose tissue, assessment of primary and secondary dentition, assessment of pubertal development according to Tanner criteria, assessment of bone maturity)</td>
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<tr>
<td>b. Comparison of measured values with standards for healthy children of the same age and sex. Interpretation of growth charts, calculation of body mass index, prediction of final body height. Basic diagnostic and therapeutic procedures in children with growth and</td>
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developmental disorders: short stature, high stature, premature puberty, delayed puberty, malnutrition, obesity, hirsutism.

**P17 - P18**

**Nutrition and eating disorders**

a. **Feeding of infant, preschool and school-age child**
   - Breastfeeding (characteristics of breast milk, advantages of breastfeeding, difficulties in breastfeeding)
   - Formula feeding
   - Introducing solid foods
   - Infantile colic
   - Acquiring eating habits
   - Balanced diet for preschool and school-age child
   - Prevention of vitamin D and iron deficiency

b. **Feeding of adolescent and eating disorders**
   - Anorexia nervosa
   - Bulimia

c. **Weight disorders**
   - Malnutrition
   - Overweight and obesity

d. **Vitamin and mineral disorders**
   - Rickets
   - Tetany

**P19 - P20**

**Fluid, electrolyte and acid-base disorders**

- Daily requirements of fluid and electrolytes
- Pathological fluid losses
- Clinical signs of dehydration
- Treatment of dehydration - oral and intravenous rehydration
- Sodium disorders: hyponatremia, hypernatremia
- Potassium disorders: hypokalemia, hyperkalemia
- Acid-base/osmolar gap disturbances
- Metabolic acidosis – etiology, pathophysiology, treatment

**P21 - P22**

**Clinical approach to children with inborn errors of metabolism**

- Clinical manifestations of metabolic diseases
- Pathognomonic clinical findings associated with inborn errors of metabolism
- Laboratory findings suggestive for inherited metabolic diseases
- Initial laboratory investigation and specific tests/selective screening
- Newborn screening
- Principles of the treatment
- Psychosocial aspects
Clinical approach to children with genetic malformations
Family pedigree
Family history and physical examination in genetics
Significance of early diagnosis of genetic anomalies
Indications for prenatal genetic testing
Cytogenetic analysis and molecular genetics
The most common clinical disorders due to chromosomal and gonosomal abnormalities
Genetic counselling

Neonatology

a. Physical examination of the newborn infant
Initial care in the delivery room
Resuscitation of the newborn
APGAR score
Assessment of gestational age
Assessment of respiratory disorders
Body characteristics of the newborn: the cranium, fontanels, measurement of body weight, length and head circumference
General appearance, crying characteristics, skin color and skin changes, pathological signs: jaundice, cyanosis, bleeding, skin infections, umbilical infections, mastitis
Examination of the oral cavity
Chest: Auscultation of the lungs, normal and pathological sounds
Auscultation of the heart, pulse and blood pressure measurement
Palpation of the abdomen, size of the liver and spleen, auscultation of bowel sounds, flatulence
External genitalia of female/male term and preterm newborn
Examination of the hips
Neurological examination of the newborn: normal and pathological position, spontaneous movements, active and passive tone, neonatal primitive reflexes

b. Care of the newborn infant
Care of the skin and umbilical cord
Maintaining a normal body temperature
Breastfeeding
Formula feeding
Normal and pathological stool

c. Diagnostic and therapeutic procedures
Blood and urine sampling
Indications and principles of the phototherapy and exchange transfusion
Central venous catheter placement (umbilical catheter, PICC catheter)
Intubation of the newborn
Basic principles of oxygen therapy
Non-invasive respiratory support
Mechanical ventilation
Cerebral function monitoring (CFM)  
Therapeutic hypothermia  
Neonatal screening (metabolic diseases, hearing screening, screening for critical congenital heart defects)

d. **The most common pathological conditions in neonatology** (tachypnea, dyspnea, jaundice, infections, perinatal asphyxia, congenital heart defects, birth injuries)

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<th>P33 - P34 - P35 - P36 - P37 - P38 - P39 - P40</th>
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**Pediatric pulmonology**

a. **Propedeutics**  
Examination of the nose, oral cavity, pharynx, tonsils and external auditory canal  
Airway patency  
Auscultation and percussion of the lungs  
Normal respiratory rates by age  
Symptoms of respiratory failure

b. **Diagnostic and therapeutic procedures**  
Indications for the chest X-ray  
Pulmonary function tests  
Blood gas analysis  
Indications for oxygen supplementation  
Tuberculin sensitivity (PPD) test – procedure and interpretation

c. **The most common pathological conditions and diseases in pediatric pulmonology** (acute upper respiratory tract infections, pneumonia, asthma, cystic fibrosis, airway foreign bodies)

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**Pediatric cardiology**

a. **Propedeutics**  
Specific signs and symptoms  
Inspection, palpation, auscultation; palpation of peripheral pulses  
Normal heart rate by age  
Blood pressure measurement  
Observation of external signs: cyanosis, venous pulsations, heart hump  
Interpretation of chest X-rays  
Standard values and characteristics of electrocardiographic findings in children

b. **The most common pathological conditions and diseases in pediatric cardiology**  
Hemodynamics in congenital heart diseases  
Basic features of cyanotic congenital heart diseases  
Basic features of acyanotic congenital heart diseases  
Cyanotic spells and management  
The most common disturbances of heart rate and rhythm  
Heart failure: signs, symptoms, diagnosis and therapy
| P49 - P50 | **Immunity and immunodeficiencies**  
Clinical features of the child with immunodeficiency  
Basic laboratory evaluation of the child with immunodeficiency  
Principles of treatment  
Secondary immunodeficiencies  
Infections in patients with impaired immunity | 2 |
|---|---|
| P51 - P52 | **Pediatric allergology**  
Diagnostic testing  
Principles of treatment of allergic diseases  
Prevention of allergic diseases  
The most common pathological conditions and diseases in pediatric allergology (atopic dermatitis, allergic rhinitis, urticaria, angioedema, food allergy, drug allergy) | 2 |
| P53 - P54 | **Pediatric rheumatology**  
Common clinical features of rheumatic diseases in children  
Diagnostic approach  
Principles of treatment  
The most common pathological conditions and diseases in pediatric rheumatology (rheumatic fever, juvenile idiopathic arthritis, systemic lupus erythematosus, vasculitis) | 2 |
| P55 - P56 - P57 - P58 - P59 - P60 - P61 - P62 | **Pediatric gastroenterology**  
a. **Propedeutics**  
Inspection of the abdomen, abdominal topography  
Superficial and deep palpation of the abdomen  
Percussion of the abdomen: liver, spleen, lumbar percussion  
Palpation of the liver and spleen  
Auscultation of the abdomen (peristalsis and vascular murmurs)  
Abdominal masses, hernias, flatulence, ascites  
b. **Diagnostic procedures**  
Stool sample collection  
Preparing the child for endoscopic examinations  
Digital rectal exam  
Enema administration  
c. **The most common digestive system pathologies** (gastroesophageal reflux, gastritis and peptic ulcer, foreign body ingestion, celiac disease, inflammatory bowel disease) | 8 |
### Pediatric Endocrinology

**a. Basic diagnostic and therapeutic procedures in children with growth and developmental disorders:** short stature, tall stature, premature puberty, delayed puberty, gynecomastia, malnutrition, obesity, hirsutism

**b. Diabetes mellitus**
Diagnosis: history, physical examination (especially assessment of vital functions and hydration), blood glucose testing using test strips and blood glucose meter, measurement of glucose and ketone concentrations in urine using test strips, acid-base and electrolyte analysis.
Basic principles of therapy and monitoring of patients: blood glucose monitoring, nutrition and physical activity of the child with diabetes, principles of insulin therapy, basic characteristics of human insulin preparations and insulin analogues, basic principles of insulin pump therapy, treatment of acute complications (hypoglycemia, diabetic ketoacidosis)

### Pediatric Nephrology

**a. Propedeutics**
Palpation of the kidneys and bladder, examination of external genitalia
Urine collection for routine and microbiological examination
Urinalysis
Renal function tests
Symptoms and signs of kidney and urinary tract diseases: edema, hypertension, oliguria, polyuria, hematuria, proteinuria

**b. The most common pathological conditions and diseases of the urinary tract**
(urinary tract infection, urinary tract abnormalities, vesicoureteral reflux, acute glomerulonephritis, nephrotic syndrome, urolithiasis, acute renal injury)

### Pediatric Hematology and Oncology

**a. Propedeutics**
Carefully obtained history for iron deficiency anemia, hemolytic anemia, lymphadenopathy and bleeding diathesis
Clinical features of blood disorders (pallor, jaundice, hepatomegaly, splenomegaly, lymphadenopathy)
Laboratory findings of blood disorders (normal and pathological values of complete blood count, morphological changes of red blood cells, fetal hemoglobin, serum iron, ferritin, bilirubin and haptoglobin)
Differential diagnosis of anemia
Palpation and description of lymph nodes, liver and spleen
Differential diagnosis of enlarged lymph node
Types of bleeding and association with bleeding disorders

### b. Diagnostic procedures

- Peripheral blood smear
- Basic interpretation of complete blood count and age-dependent changes in childhood
- Interpretation of coagulation test results
- Lymph node puncture, lumbar puncture, bone marrow aspiration (only observation)

### c. Transfusion therapy

- Indications for red blood cell transfusions and platelet transfusions
- Principles of blood component transfusions
- Risks of blood transfusions

### d. The most common diseases of blood, hematopoietic organs and solid tumors in children

- Iron deficiency anemia, hemolytic anemia, hereditary disorders of hemostasis, thrombocytopenia, acquired neutropenia, leukemia, lymphoma, solid malignant tumors
- Principles of antitumor therapy
- Supportive therapy
- Psychological approach to the child with malignant disease and the family

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**Pediatric neurology**

#### a. Propedeutics

- History in neurology
  - Developmental assessment (from 2 months to 2 years)
  - Observation (spontaneous movements, behaviour)
  - Assessment of gross and fine motor skills
  - Postural reactions and muscle tone
  - Primitive reflexes
  - Tendon reflexes
  - Sensory functions
  - Social contact

- Neurologic examination of preschool and school-age children
  - Inspection
  - Assessment of the mental state
  - Cranial nerves
  - Motor examination
  - Coordination
  - Sensory functions
  - Tendon reflexes
  - Gait
  - Meningeal signs
  - Cognitive functions
  - Examination of the head and face (head circumference, fontanels, cranial sutures/dyscrania, dysmorphia)
  - Examination of the spine (deformities, anomalies)
b. Diagnostic procedures
Neurophysiological procedures (EEG, evoked potentials, electromyography)
Neuroradiologic procedures (cranial ultrasonography, CT, MR)
Lumbar puncture
- indications
- technique
- interpretation of the cerebrospinal fluid findings

c. The most common pathological conditions and diseases of the nervous system and muscles (headaches, cerebral palsy, epilepsy and epileptic syndromes, neurocutaneous syndromes, neuromuscular disorders, facial palsy)

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<td>The acutely ill child</td>
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<tr>
<td>Recognition of life-threatening conditions</td>
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<td>Basic life support</td>
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<td>Advanced life support</td>
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<td>Intubation</td>
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<tr>
<td>Vascular access / Intraosseous administration of drugs</td>
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<td>Post-resuscitation care</td>
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Total number of practicals 102

Students’ obligations

1. Students are required to attend classes regularly (lectures, seminars, practicals). Attendance at all forms of teaching is checked.

2. A student has the right to miss up to 30% of classes (for health reasons). The absence from classes is justified by medical certificate. The compensation of practicals is possible with the agreement of the teaching assistant and with the approval of the Head of the Department.

3. Use of protective equipment and instruments: Students are required to attend practicals in clean medical coats and to bring a stethoscope. Depending on the epidemiological situation, protective masks, latex gloves and other protective equipment will be used.

4. If a student has a possible contagious disease (common cold, acute enteral infection, etc.) and comes to the practical, he is obliged to inform the teacher about his/her health condition, who will assess the risk of student contact with outpatients and hospitalized patients.

5. It is forbidden to record and photograph patients and staff.

6. Students are required to respect good practice of academic behavior with colleagues, teachers and other staff of the Department of Pediatrics.
Students' assessment (types of exams, description of the written / oral / practical exam, scoring and grading criteria)

The ECTS grading system is carried out in accordance with the current University of Rijeka Study Regulations and the Student Regulations at the Faculty of Medicine Rijeka (adopted by the Faculty Council of the Faculty of Medicine Rijeka). The ECTS grading scale is a grading system defined in the European Credit Transfer and Accumulation System (ECTS) framework by the European Commission.

The activity and knowledge of students is evaluated and assessed during the course and at the final exam. Out of a total of possible 100 points, a student can achieve a maximum of 50 points during the course and up to 50 points at the final practical/oral exam. Student progress assessment is performed using ECTS (D-A and F) and a numerical system (2-5 and 1). Credits are awarded only when the course has been completed and all required examinations have been successfully taken.

During the course, the student acquires points by assessing the knowledge in the written exams, by achieved success in seminars and by achieved success in practicals.

The Written exam (up to 20 points) is held after the lectures. It has 60 multiple choice questions. A student has passed a written test if he/she answers at least 50% of the questions correctly.

The results of the Written exam are evaluated according to the following table:

<table>
<thead>
<tr>
<th>Correct answers</th>
<th>Rating</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 - 60</td>
<td>excellent (5)</td>
<td>20</td>
</tr>
<tr>
<td>45 - 53</td>
<td>very good (4)</td>
<td>17</td>
</tr>
<tr>
<td>36 - 44</td>
<td>good (3)</td>
<td>14</td>
</tr>
<tr>
<td>30 - 35</td>
<td>sufficient (2)</td>
<td>10</td>
</tr>
<tr>
<td>≤ 29</td>
<td>insufficient (1)</td>
<td>0</td>
</tr>
</tbody>
</table>

Achievement in seminars is assessed by seminar teachers and the student is awarded with a maximum of 20 points. The assessment is based on the activities and knowledge shown during seminars, and the group seminar work.

Achievement in seminars is evaluated according to the following table:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>excellent (5)</td>
<td>20</td>
</tr>
<tr>
<td>very good (4)</td>
<td>17</td>
</tr>
<tr>
<td>good (3)</td>
<td>14</td>
</tr>
<tr>
<td>sufficient (2)</td>
<td>10</td>
</tr>
<tr>
<td>insufficient (1)</td>
<td>0</td>
</tr>
</tbody>
</table>
Achievement in practicals is evaluated by teachers and the student is awarded with maximum of 10 points. The assessment is based on the student’s activities, knowledge and skills acquired and demonstrated during the practicals.

Achievement in practicals is evaluated according to the following table:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>excellent (5)</td>
<td>10</td>
</tr>
<tr>
<td>very good (4)</td>
<td>8</td>
</tr>
<tr>
<td>good (3)</td>
<td>7</td>
</tr>
<tr>
<td>sufficient (2)</td>
<td>5</td>
</tr>
<tr>
<td>insufficient (1)</td>
<td>0</td>
</tr>
</tbody>
</table>

A student who achieves 25 or more points during the course can take the final exam. The final grade reflects the sum of points earned during the course and those earned at the final exam. If the final exam is graded as insufficient, it is considered that the student has not passed the exam regardless of the number of points earned during the course.

A student who achieves less than 25 points during the course is not entitled to take the final exam. The student will have the opportunity for one corrective practical and oral intermediate exam (colloquium). If he passes remedial mid-exam, he/she can take the final exam under the same conditions as those students who have collected 25 points. If he/she fails the remedial mid-exam, he/she is graded F (failing), cannot gain ECTS credits and needs to re-enroll in the course.

The final exam consists of a practical and a theoretical part. The practical part of the exam is a practical test of knowledge, including the physical examination of the patient. Successful practical part of the exam is a condition for taking the theoretical part of the final exam. In case the student did not pass the oral exam, he/she is obliged to repeat it on the following final exam. The theoretical part of the final exam covers the entire teaching material of the course.

The final exam (up to 50 points) is graded according to the following table:

<table>
<thead>
<tr>
<th>Result</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>excellent (5)</td>
<td>50</td>
</tr>
<tr>
<td>very good (4)</td>
<td>40</td>
</tr>
<tr>
<td>good (3)</td>
<td>30</td>
</tr>
<tr>
<td>sufficient (2)</td>
<td>25</td>
</tr>
<tr>
<td>insufficient (1)</td>
<td>0</td>
</tr>
</tbody>
</table>
The final grade is the sum of ECTS grades achieved during the course and at the final exam. It is expressed by the corresponding percentage, the letter of the alphabet and the numerical grade according to the following table:

<table>
<thead>
<tr>
<th>Final grade</th>
<th>Percentage Range</th>
<th>Description</th>
<th>Numerical Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>(90-100%)</td>
<td>excellent</td>
<td>5</td>
</tr>
<tr>
<td>B</td>
<td>(75-89,9%)</td>
<td>very good</td>
<td>4</td>
</tr>
<tr>
<td>C</td>
<td>(60-74,9%)</td>
<td>good</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>(50-59,9%)</td>
<td>satisfactory</td>
<td>2</td>
</tr>
</tbody>
</table>

**Exam dates**

- May 24th 2022
- June 7th 2022
- July 1st 2022
- September 5th 2022

**Other important information**

Teaching content and other information related to the course Pediatrics is posted on the Merlin platform. Additional information can be obtained continuously during classes from the course coordinator, by personal contact or via e-mail (the e-mail addresses of the teaching staff of the Department of Pediatrics can be found on the Faculty website).
## COURSE SCHEDULE FOR ACADEMIC YEAR 2021/2022

### Lecture Schedule
All lectures will be held in person at the Department of Pediatrics, Clinical Hospital Centre Rijeka, Istarska 43, 51000 Rijeka – Seminar Hall (main building). We are constantly adapting to changing advice as it emerges during Covid-19 pandemic. Students will be announced about all changes in a timely manner.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Lecture</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>28/03/2022</strong></td>
<td>08:45 - 09:30</td>
<td>Lecture 1</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td>(Monday)</td>
<td>09:45 - 10:30</td>
<td>Lecture 2</td>
<td>Assoc.Prof. I. Bilić Cače</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 7</td>
<td>Assoc.Prof. A. Miliardović</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 8</td>
<td>Assoc.Prof. A. Miliardović</td>
</tr>
<tr>
<td></td>
<td>12:45 - 13:30</td>
<td>Lecture 5</td>
<td>Assoc.Prof. A. Miliardović</td>
</tr>
<tr>
<td><strong>29/03/2022</strong></td>
<td>08:45 - 09:30</td>
<td>Lecture 6</td>
<td>Assoc.Prof. I. Bilić Cače</td>
</tr>
<tr>
<td>(Tuesday)</td>
<td>09:45 - 10:30</td>
<td>Lecture 9</td>
<td>Prof. I. Prpić</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 10</td>
<td>Prof. I. Prpić</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 3</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td></td>
<td>12:30 - 13:15</td>
<td>Lecture 4</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td><strong>30/03/2022</strong></td>
<td>08:45 - 09:30</td>
<td>Lecture 14</td>
<td>Assoc.Prof. I. Bilić Cače</td>
</tr>
<tr>
<td>(Wednesday)</td>
<td>09:45 - 10:30</td>
<td>Lecture 15</td>
<td>Assoc.Prof. I. Bilić Cače</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 17</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 18</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td></td>
<td>12:45 - 13:30</td>
<td>Lecture 19</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td><strong>31/03/2022</strong></td>
<td>08:45 - 09:30</td>
<td>Lecture 16</td>
<td>Assoc.Prof. I. Bilić Cače</td>
</tr>
<tr>
<td>(Thursday)</td>
<td>09:45 - 10:30</td>
<td>Lecture 11</td>
<td>Prof. G. Palčevski</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 12</td>
<td>Prof. G. Palčevski</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 20</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td></td>
<td>12:45 - 13:30</td>
<td>Lecture 26</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>Location</td>
<td>Instructor</td>
</tr>
<tr>
<td>------------</td>
<td>---------------</td>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>01/04/2022</td>
<td>08:45 - 09:30</td>
<td>Lecture 21</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td></td>
<td>09:45 - 10:30</td>
<td>Lecture 22</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 25</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 23</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td></td>
<td>12:45 - 13:30</td>
<td>Lecture 24</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>04/04/2022</td>
<td>08:45 - 09:30</td>
<td>Lecture 32</td>
<td>Prof. G. Palčevski</td>
</tr>
<tr>
<td></td>
<td>09:45 - 10:30</td>
<td>Lecture 33</td>
<td>Prof. G. Palčevski</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 27</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 28</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td></td>
<td>12:45 - 13:30</td>
<td>Lecture 13</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td>05/04/2022</td>
<td>08:45 - 09:30</td>
<td>Lecture 29</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td></td>
<td>09:45 - 10:30</td>
<td>Lecture 30</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 34</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 35</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td></td>
<td>12:45 - 13:30</td>
<td>Lecture 31</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>06/04/2022</td>
<td>08:45 - 09:30</td>
<td>Lecture 36</td>
<td>Prof. A. Cvitković Roić</td>
</tr>
<tr>
<td></td>
<td>09:45 - 10:30</td>
<td>Lecture 37</td>
<td>Prof. A. Cvitković Roić</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 38</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 39</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td></td>
<td>12:45 - 13:30</td>
<td>Lecture 44</td>
<td>Assoc. Prof. I. Vlašić Cicvarić</td>
</tr>
<tr>
<td>07/04/2022</td>
<td>08:45 - 09:30</td>
<td>Lecture 40</td>
<td>Prof. I. Prpić</td>
</tr>
<tr>
<td></td>
<td>09:45 - 10:30</td>
<td>Lecture 41</td>
<td>Prof. I. Prpić</td>
</tr>
<tr>
<td></td>
<td>10:45 - 11:30</td>
<td>Lecture 42</td>
<td>Assoc. Prof. K. Lah Tomulić</td>
</tr>
<tr>
<td></td>
<td>11:45 - 12:30</td>
<td>Lecture 43</td>
<td>Assoc. Prof. K. Lah Tomulić</td>
</tr>
<tr>
<td></td>
<td>12:45 - 13:30</td>
<td>Lecture 45</td>
<td>Prof. J. Roganović</td>
</tr>
</tbody>
</table>
**Schedule of seminars and practicals**

Seminars will be held in person at the Department of Pediatrics, Clinical Hospital Centre Rijeka, Istarska 43, 51000 Rijeka – Seminar Hall (main building) and Cabinet Room.

Practicals will be held in person at the divisions of the Department of Pediatrics, Clinical Hospital Centre Rijeka, Istarska 43, 51000 Rijeka.

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<table>
<thead>
<tr>
<th>Seminar</th>
<th>Title</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>History</td>
<td>Assoc.Prof. A. Milardović</td>
</tr>
<tr>
<td>S2</td>
<td>Physical examination of the child</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S3</td>
<td>Recognition of the seriously ill child</td>
<td>Assoc.Prof. K. Lah Tomulić</td>
</tr>
<tr>
<td>S4</td>
<td>Growth disorders</td>
<td>I. Butorac Ahel, MD</td>
</tr>
<tr>
<td>S5</td>
<td>Fever</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S6</td>
<td>Cough</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S7</td>
<td>Respiratory disorders in neonates</td>
<td>Assoc.Prof. I. Bilić Čače</td>
</tr>
<tr>
<td>S8</td>
<td>Perinatal brain damage</td>
<td>Assoc.Prof. I. Bilić Čače</td>
</tr>
<tr>
<td>S9</td>
<td>Neonatal jaundice</td>
<td>Assoc.Prof. I. Bilić Čače</td>
</tr>
<tr>
<td>S10</td>
<td>Infections in the newborn</td>
<td>Assoc.Prof. I. Bilić Čače</td>
</tr>
<tr>
<td>S11</td>
<td>Premature infant</td>
<td>Assoc.Prof. I. Bilić Čače</td>
</tr>
<tr>
<td>S12</td>
<td>Pneumonia</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S13</td>
<td>Tuberculosis</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S14</td>
<td>Acute inflammatory airway obstruction</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S15</td>
<td>Childhood asthma</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S16</td>
<td>Foreign bodies of the airway</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S17</td>
<td>Cystic fibrosis</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S18</td>
<td>Cyanosis</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S19</td>
<td>Chest pain</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S20</td>
<td>Congenital heart disease</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S21</td>
<td>Heart failure</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S22</td>
<td>The most common arrhythmias</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S23</td>
<td>Evaluation of a child with a bleeding diathesis</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td>Page</td>
<td>Topic</td>
<td>Author</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>S24</td>
<td>Lymphadenopathy</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td>S25</td>
<td>Malignant diseases</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td>S26</td>
<td>Emergencies in oncology</td>
<td>Prof. J. Roganović</td>
</tr>
<tr>
<td>S27</td>
<td>Urticaria and angioedema</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S28</td>
<td>Anaphylaxis. Drug hypersensitivity.</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S29</td>
<td>Rheumatic diseases</td>
<td>Prof. S. Banac</td>
</tr>
<tr>
<td>S30</td>
<td>Infant nutrition</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S31</td>
<td>Acute diarrhea</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S32</td>
<td>Gastroesophageal reflux disease. Food hypersensitivity</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S33</td>
<td>Celiac disease</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S34</td>
<td>Inflammatory bowel disease</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S35</td>
<td>Approach to a child with suspected liver disease</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S36</td>
<td>Emergencies in gastroenterology</td>
<td>K. Baraba Dekanić, MD</td>
</tr>
<tr>
<td>S37</td>
<td>Obesity</td>
<td>I. Butorac Ahel, MD</td>
</tr>
<tr>
<td>S38</td>
<td>Diabetes mellitus</td>
<td>I. Butorac Ahel, MD</td>
</tr>
<tr>
<td>S39</td>
<td>Disorders of the thyroid gland</td>
<td>I. Butorac Ahel, MD</td>
</tr>
<tr>
<td>S40</td>
<td>Precocious puberty</td>
<td>I. Butorac Ahel, MD</td>
</tr>
<tr>
<td>S41</td>
<td>Disorders of sex development</td>
<td>I. Butorac Ahel, MD</td>
</tr>
<tr>
<td>S42</td>
<td>Diseases related to vitamin intake and metabolism</td>
<td>I. Butorac Ahel, MD</td>
</tr>
<tr>
<td>S43</td>
<td>Hypoglycemia</td>
<td>I. Butorac Ahel, MD</td>
</tr>
<tr>
<td>S44</td>
<td>Urinary tract infection</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S45</td>
<td>Hematuria and proteinuria</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S46</td>
<td>Acute kidney injury</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S47</td>
<td>Hypertension</td>
<td>L. Ružman, MD</td>
</tr>
<tr>
<td>S48</td>
<td>Headache</td>
<td>J. Radić Nišević, MD PhD</td>
</tr>
<tr>
<td>S49</td>
<td>Anomalies of the central nervous system</td>
<td>J. Radić Nišević, MD PhD</td>
</tr>
<tr>
<td>S50</td>
<td>Cerebral palsy and neurodevelopmental disorders</td>
<td>J. Radić Nišević, MD PhD</td>
</tr>
<tr>
<td>S51</td>
<td>Epileptic seizures, epilepsies and epileptic syndromes</td>
<td>Prof. I. Prpić</td>
</tr>
<tr>
<td>S52</td>
<td>Occasional seizures</td>
<td>Prof. I. Prpić</td>
</tr>
<tr>
<td>S53</td>
<td>Neuromuscular diseases</td>
<td>J. Radić Nišević, MD PhD</td>
</tr>
<tr>
<td>S54</td>
<td>Acute disorders of consciousness</td>
<td>Assoc.Prof.A.Milardović</td>
</tr>
<tr>
<td>Lecture</td>
<td>Title</td>
<td>Instructor</td>
</tr>
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