

## Higher education module program

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| Faculty name                          | Medicine  |
| Unit conducting the module            | the Institute of Paediatrics  |
| Module name                           | Pediatrics  |
| Language                              | English   |
| Educational goals                     | <p>The aim of the module is</p> <ul style="list-style-type: none"> <li>- to learn practical skills within the field of pediatrics</li> <li>- to systematise acquired knowledge</li> <li>- to prepare a student to work autonomously</li> </ul>  |
| Objectives of education in the module | <p>In the frame of knowledge, a graduate:</p> <p>E.W1. knows most common genetic, environmental and epidemiological background of most common diseases</p> <p>E.W2. knows the principles of nutrition for healthy and sick children, principles of preventive vaccinations and keeping child`s health records</p> <p>E.W3. knows and understands the causes, symptoms, principles of diagnosing and therapeutic procedures of most common children`s diseases:</p> <ul style="list-style-type: none"> <li>a) rickets, tetany, convulsion,</li> <li>b) heart defects, myocarditis, endocarditis, pericarditis, cardiomyopathy, rhythm abnormalities, cardiac failure, arterial hypertension, fainting,</li> <li>c) acute and chronic diseases of upper and lower respiratory tract, congenital respiratory defects, tuberculosis, mucoviscidosis, asthma, allergic rhinitis, rash, anaphylactic shock, angioedema</li> <li>d) anemia, bleeding disorders, marrow failures, childhood cancers, including solid tumours typical for children, lymphadenopathy and splenomegaly</li> <li>e) acute and chronic stomach pain, vomiting, diarrhea, constipation, bleeding from digestive tract, gastric ulcers and nonspecific disorders of intestines, pancreas disorders, cholestasis and hepatic disorders, other acquired or congenital disorders of the digestive tract,</li> <li>f) urinary infections, congenital abnormalities of the urinary system, nephrotic syndrome, nephrolithiasis, acute and chronic renal failure, acute and chronic nephritis, systemic renal disease, abnormal urination, vesicoureteral reflux,</li> <li>g) growth hormone deficiencies, thyroid and parathyroid diseases, adrenal gland disorders, diabetes, obesity, pubertal and gonads` disorders,</li> <li>h) cerebral palsy, encephalitis and meningitis, epilepsies,</li> <li>i) the most common pediatric infectious diseases,</li> <li>j) genetic syndromes, diagnostics and prevention principles</li> </ul> |

k) connective tissue disorders, rheumatic fever, juvenile idiopathic arthritis, systemic lupus erythematosus, dermatomyositis

l) knows the symptoms and treatment in primary immunodeficiencies, autoimmune diseases and basics of cancer immunotherapy, knows the principles and can interpret basic immunodiagnostic tests

E.W4. is aware of the problems of child abuse and sexual abuse, mental deficiencies, behavioral disorders: psychoses, addictions, nutrition and excretion disorders in children

E.W5. basic methods of fetal diagnostics and therapy

E.W6. knows the most common life hazard conditions in children and management strategies in such situations

In the frame of skills:

E.U2. carries out history taking in a child and his/her family

E.U4. performs physical examination of a child of any age

E.U6. performs tentative hearing and vision field assessment and otoscopic examination

E.U7. assesses patient's general condition, level of consciousness and orientation

E.U8. assesses the newborn's condition in Apgar's scale, assesses baby's maturity, can examine neonatal reflexes

E.U9. compares anthropometric and blood pressure measurements with data in growth chart

E.U10. can assess the sexual maturation level

E.U11. performs child check-ups

E.U12. performs differential diagnostics of most common diseases in adults and children

E.U16. plans diagnostic, therapeutic and prophylactic procedures

E.U21. identifies conditions in which survival time, functional status or patient's preferences limit procedures concordant with the directives specified for a given disease

E.U24. interprets laboratory tests and identifies causes of abnormalities

E.U25. can apply nutritional therapy (including enteral and parenteral nutrition)

E.U26. plans procedures in case of exposure to blood transmitted infections

E.U27. can qualify a patient to vaccination

E.U28. can collect specimens to be used for laboratory diagnostics

E.U29. can perform basic medical procedures, including:

- a) temperature, pulse rate and noninvasive arterial pressure measurements
- b) vital signs monitoring using a cardiomonitor, pulsoxymetry
- c) spirometric test, oxygen therapy, assisted ventilation and intubation
- d) introduction of endotracheal tube

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|   | <p>e) intravenous, intramuscular and subcutaneous injections, cannulation of peripheral veins, collecting of peripheral venous blood, collecting blood specimens for smear, collecting arterial blood, collecting arterialized capillary blood</p> <p>f) taking nasal, pharyngeal and dermal swabs, pleural puncture</p> <p>g) urinary bladder catheterization in men and women, stomach probing, stomach lavage, enema</p> <p>h) standard ECG at rest with interpretation, electric cardioversion and defibrillation</p> <p>i) simple trip tests and blood glucose measurements</p> <p>E.U30. assists while conducting the following procedures and treatments:</p> <p>a) blood and blood components transfusions</p> <p>b) pleural cavity drainage</p> <p>c) puncture of the pericardial sac</p> <p>d) puncture of the peritoneal cavity</p> <p>e) lumbar puncture</p> <p>f) fine needle biopsy</p> <p>g) intradermal and scarificating tests and interprets their results</p> <p>h) intradermal and scarification tests and interprets their results</p> <p>i) bone marrow aspiration biopsy</p> <p>E.U32. can plan specialist consultations</p> <p>E.U38. can keep medical patient record</p> |
| Assessment criteria and methods of evaluating achieved objectives of education  | <p>Students are assessed based on attendance and participation in classes, obtaining skills is confirmed in the book called "The List of Medicine Graduate's Skills"</p> <p>The final exam:</p> <ol style="list-style-type: none"> <li>1. Test - 100 multiple-choice questions with single best answer.<br/>Students pass the test with at least 60% of right answers.</li> <li>2. Theoretical oral exam (on the bedside)</li> </ol>  |
| Type of a training module (mandatory/optional)  | Mandatory   |
| Year of studies   | III-VI  |
| Term  | V - XII   |
| Type of studies   | full Master's degree course   |
| The form and conditions for passing the module, including the requirements to be admitted to the examination, to be given a | <p>Module passing requires fulfilling the following conditions:</p> <ol style="list-style-type: none"> <li>1. attendance in classes</li> <li>2. active participation in classes</li> <li>3. passing the final exam</li> </ol>   |

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| <p>credit, and also the form and conditions for passing classes which comprise a given module</p> | <p>4. passing the theoretical exam</p>   |
| <p>Training module content (with the division into teaching methods)</p>                          | <p>III year – 100 hours including seminars (50 hours) and practical exercises (50 hours)</p> <p><b>Seminars/case presentations:</b></p> <ol style="list-style-type: none"> <li>1. Physical development. Assessment of growth</li> <li>2. Fever</li> <li>3. Fetal and neonatal circulation. Transition period.</li> <li>4. Infectious diseases in neonates</li> <li>5. Differential diagnosis of proteinuria, erythrocyturia and pyuria</li> <li>6. Congenital defects of kidney and urinary tract</li> <li>7. Congenital heart defects. History and physical examination. Major and minor clinical signs</li> <li>8. Vomiting, diarrhoea, dehydration</li> <li>9. Lymphadenopathy, hepatoand splenomegaly</li> <li>10. Anemias in children, bleeding disorders</li> <li>11. Normal and abnormal growth</li> <li>12. Normal and abnormal puberty</li> <li>13. Assessment of motor, cognitive and speech development</li> <li>14. Food allergy. Anaphylactic shock.</li> <li>15. Diagnostic and therapeutic management of children with acute and chronic respiratory disorders</li> <li>16. Respiratory failure – definition, causes, diagnostics, treatment</li> <li>17. Allergic diseases: asthma, allergic rhinitis, atopic dermatitis, (definition, diagnostic and therapeutic approach).</li> <li>18. Genetic lung diseases: Cystic fibrosis (definition, genetics, symptomatology, diagnosis, treatment and screening). Primary ciliary dyskinesia</li> <li>19. The diagnosis of definitive or probable tuberculosis in children. A child who had a contact with adult with tuberculosis disease.</li> <li>20. Pneumonia - classification, clinical course, imaging techniques - USG, CT</li> <li>21. Jaundice</li> <li>22. Nutrition of a healthy child and with gastrointestinal diseases</li> <li>23. Development of GI tract and congenital gastrointestinal anomalies</li> <li>24. Chronic diarrhoea</li> <li>25. Chronic abdominal pain. Functional disorders of GI tract</li> </ol> <p><b>Practical exercises</b></p> <ol style="list-style-type: none"> <li>1. Hospitalized child. The rules of patient and parents respect. Patient's records.</li> <li>2. Taking history in pediatrics</li> </ol> |

3. Assessment of general condition. Assessment of growth
4. Skin, subcutaneous tissue, lymph nodes. Assessment of nutrition
5. The chest: inspection, percussion, auscultation. Blood pressure measurement
6. The most common symptoms of respiratory tract disorders:cough,dyspnoea, stridor, cyanosis, physiological and pathological auscultatory findings
7. The abdomen-inspection, bowel sounds,percussion and palpation. External genitalia examination
8. The most common symptoms of GI tract disorders:pain, vomiting, diarrhea, constipations, hepatosplenomegaly
9. The muscular strength and tone. Deep tendon reflexes. Meningeal signs in different age.
10. Oral cavity, nose and pharynx. Symptoms of oral cavity disorders. The neck examination.
11. Examination of extremities and joints. Active and passive range of movements. Hips examination.
12. Summary-full physical exam.Case presentation by the student
13. Acute and chronic upper respiratory tract infections. Laryngitis and epiglottitis.
14. Bronchiolitis – management and prevention.
15. Asthma, chronic bronchitis, post nasal drip syndrome. The techniques of inhalations and nebulization.
16. Community acquired pneumonia. Complications – empyema, abscess. Nosocomial pneumonia – prevention.
17. Artificial ventilation. Chronic assisted ventilation. Tracheostomy. Blood gases analysis.
18. Chronic cough – diagnostic and therapeutic management. Pulmonary function tests: spirometry, challenge tests, PEF. Recommendation for flexible bronchoscopy
19. Urticaria/angioedema. Allergy testing: Skin prick tests, intradermal tests, patch tests, blood tests – recommendation and interpretation.
20. Gastroesophageal reflux disease. Infant regurgitation. Stomach ulcers and H. pylori infection.
21. Inflammatory bowel diseases.
22. Additional tests in pediatric gastroenterology (hydrogen breath test, manometry). Endoscopic examinations.
23. Acute infections of GI tract.
24. Urgent conditions in pediatric gastroenterology.
25. Approach to neonatal and childhood jaundice.

IV year – 90 hours including seminars (40 hours) and practical exercises (50 hours)

**Seminars/case presentations**

1. Infectious diseases in neonates

2. Cyanotic and non cyanotic cardiac defects
3. Cardiomyopathies
4. Ductus depended cardiac defects in neonates
5. Shock in neonates
6. Congestive heart failure in infants-diagnostics and treatment.
7. Congenital heart defects with functionally single ventricle.
8. JRA/ Lupus erythromatosus
9. Congenital anomalies of urinary tract in children
10. Arterial hypertension
11. Acute renal injury
12. Chronic renal failure
13. Glomeluropathies-primary and secondary. Nephrotic syndrome.
14. Renal failure treatment-peritoneal dialysis, renal transplant.
15. Nocturnal enuresis
16. Stones in urinary tract. Nephrocalcinosis
17. Prematurity
18. Perinatal asphyxia/birth trauma
19. Randomized clinical trials in pediatrics
20. Decission making in pediatrics

**Practical exercises**

1. Additional tests in cardiologic diagnostics.
2. Major and minor signs of congenital heart defects.
3. Hemodynamic consequences of congenital heart defects. Interventions in pediatric cardiology.
4. Echocardiography in heart structure and function assessment.
5. Congenital heart defects
6. Nephrotic syndrome.
7. Urinary tract infections.
8. Arterial hypertension.
9. Acute kidney injury. Dialysis techniques.
10. Urinary tract malformations (Urology)
11. Pediatric rheumathology - JRA/Vasculitis/SLE
12. Fetal and neonatal circulation. Transition period.
13. Prematurity.
14. Perinatal trauma.
15. Hemolytic disease of the newborn.
16. Respiratory failure in neonates.
17. Infections in neonatal period.
18. Newborn small for the gestational age.
19. Child with chronic disorder in pediatric department.
20. Congenital errors of metabolism.

V year – 60 hours including seminars (18 hours), case presentations (12 hours) and practical exercises (30 hours)

**Seminars/case presentations**

1. Pediatric diabetology
2. Disorders of puberty. Disorders of sexual development
3. Emergencies in diabetology
4. Disorders of parathyroid. Fluid and electrolyte disorders.
5. Signs and symptoms in the most common severe endocrine diseases
6. Solid tumors in pediatrics
7. Hemostatic disorders and anemia – case presentation
8. Emergencies in hematology and oncology
9. Oncology – case presentation
10. Solid tumors in neonates
11. Epileptic and non epileptic spells in children
12. Neurodegenerative disorders
13. Headache and migraine
14. Mental and developmental deficits. Cerebral palsy
15. Neuroimaging and electrophysiological techniques of CSN

**Practical exercises**

1. Growth disorders
2. Puberty disorders
3. Thyroid disorders
4. Diabetes mellitus
5. Patients overview
6. Leukemias in pediatrics
7. Lymphomas in children
8. Neuroblastoma
9. Sarcomas of soft tissue, bone tumors
10. Tumors of liver and kidneys.
11. Follow up after chemotherapy. Long lasting consequences of chemotherapy
12. Nervous system tumors in children
13. Epilepsy – differential diagnosis. Clinical approach. Treatment.
14. Neuromuscular disorders in children. Acute flaccid paresis
15. Emergencies in neurology

**VI year**

**Clinical classes - Practical occupational learning  
- 120 hours**

Students are assigned to one hospital ward for 4 weeks. Student's duties are: participation in preparation before children's examination, participation in keeping the records - recording the findings in patient's status praesens, recording tests' results in hospital records, participation in examination, participation in consulting at infirmary and different hospital wards and carrying out medical

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|  | procedures according to the list and principles written in the book called "The List of Medicine Graduate's Skills" |
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