



**Integrated academic studies medicine**

**SIXTH YEAR**

2023/2024.

**Intensive care and therapy in pediatrics**

Subject:

## **INTENSIVE CARE AND THERAPY IN PEDIATRICS**

The course is evaluated with 3 ECTS. There are 3 hours of active teaching per week (2 hours of lectures, 1 hours of practice)

## Teachers:

PB	name and surname	E-mail address	Title
1.	Biljana Vuletić	sibil.kg@gmail.com	Full professor
2.	Andjelka Stojković	andja410@mts.rs	Full professor
3.	Sanja Knežević	sanjaknez1980@yahoo.com	Assistant professor
4.	Marija Radovanović	marijar9@verat.net	Assistant professor

## COURSE STRUCTURE:

Semester	Name of the module	Week	Lectures weekly	practice weekly	Teacher
summer	gIntensive care in pediatrics	15	2	1	All

## EVALUATION:

The grade is equivalent to the number of points earned (see table). Points are earned in three ways:

### EXAM PREREQUISITES:

A student can earn up to 40 points: up to 30 points for activity during lectures and practical classes, up to 10 points for seminars during both semesters.

### FINAL EXAM:

A student can earn up to 60 points by passing a two module tests (up to 30 points for each test). In order for the student to pass the exam, he must achieve more than 50% of points on each of the defined elements of the pre-exam activities and two final module tests.

Exam prerequisites	Examination methods (maximum 100 points)		
	No. of points:	Final exam	No. of points:
Student's activity during Lectures and practical classes in summer semester	<b>30</b>	Test modul 1	30
Seminars/homework during semesters	<b>10</b>	Test module 2	30

### The final grade is formed as follows:

In order to pass the course, the student must obtain a minimum of 51 points, pass pre-exam activities and pass two module tests.

number of points won	grade
0 - 50	5
51 – 60	6
61 – 70	7
71 – 80	8
81 – 90	9
91 – 100	10

**LITERATURE:**

<b>the name of the textbook</b>	<b>authors</b>	<b>publisher</b>
Nelson Textbook og Pediatrics 21 st ed.	Kliegman RM, St. Geme JW, Blum NJ, Shah SS, Tasker RC, Wilson KM	Philadelphia : Elsevier-Saunders ; 2019.

## THE PROGRAM:

### TEACHING UNIT 1 (FIRST WEEK):

#### EMERGENCIES IN PEDIATRICS PULMONOLOGY

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"><li>• Croup syndrome</li><li>• Acute respiratory failure</li><li>• Asthma attack</li><li>• Foreign bodies in the respiratory tract</li><li>• Mechanical ventilation and air leakage syndrome - pneumothorax; pneumomediastinum; pneumoperitoneum</li><li>• Acute respiratory distress syndrome in children</li><li>• Threatening sudden infant death syndrome</li></ul>	<ul style="list-style-type: none"><li>• Principles of invasive and non-invasive monitoring of vital functions</li><li>• Imaging methods in emergency situations</li><li>• Endotracheal and orotracheal intubation</li></ul>

### TEACHING UNIT 2 ( SECOND WEEK):

#### EMERGENCIES IN PEDIATRICS ALLERGOLOGY

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"><li>• Anaphylactic shock</li><li>• Venoms</li></ul>	<ul style="list-style-type: none"><li>• Acute care of respiratory insufficiency in children</li><li>• The skill of examining the skin and available mucous membranes in children</li><li>• Skill in examining a child exhibiting a severe systemic allergic reaction</li><li>• The skill of recognizing the clinical picture of an allergic disease</li><li>• To systematize clinical symptoms and signs into a clinical picture of a particular allergic disease</li></ul>

### TEACHING UNIT 3 (THIRD WEEK):

#### EMERGENCIES IN PEDIATRICS CARDIOLOGY

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"><li>• Disorders of heart rhythm</li><li>• Treatment of life threatening cardiac arrhythmias in children</li><li>• Sudden Arrhythmia Death Syndromes</li><li>• Acute myocarditis and pericarditis in children</li></ul>	<ul style="list-style-type: none"><li>• Rapid recognition of basic heart rhythm disorders</li><li>• Use of an automated external defibrillator</li><li>• Monitoring of vital function</li><li>• Diagnostic imaging technique of acute pathology in pediatric cardiology</li></ul>

### TEACHING UNIT 4 (FOURTH WEEK):

#### EMERGENCIES IN PEDIATRICS CARDIOLOGY

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Pediatric and neonatal cardiopulmonary resuscitation</li> <li>• Pediatric critical care transport</li> <li>• Congenital heart defects,</li> <li>• Treatment of ductus dependent complex congenital heart disease</li> <li>• Cardiogenic shock and treatment</li> </ul>	<ul style="list-style-type: none"> <li>• Basic and advanced life support in children</li> <li>• Emergency treatments of cardiogenic shock</li> <li>• Acute therapy of newborn with critical congenital heart disease</li> </ul>

TEACHING UNIT 5 (FIFTH WEEK):

**EMERGENCIES IN PEDIATRICS NEUROLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Cerebrovascular accidents</li> <li>• Acute CNS infections – meningitis, encephalitis,</li> <li>• Hypoxic-ischemic encephalopathy</li> <li>• Intracranial hemorrhage</li> </ul>	<ul style="list-style-type: none"> <li>• Administration of drugs in a critically ill patient; analgesia and anesthesia (neuromuscular blockers; sedation and analgesia);</li> <li>• Neurophysiological assessment and monitoring</li> <li>• Neuroradiology imaging</li> </ul>

TEACHING UNIT 6 (SIXTH WEEK):

**EMERGENCIES IN PEDIATRICS NEUROLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Febrile status in children, causes, diagnosis and therapy</li> <li>• Status epilepticus</li> <li>• Raised intracranial pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Treatment of convulsive attack and coma in children</li> <li>• Anamnesis in emergency situations in pediatrics;</li> <li>• Assessment of the state of consciousness</li> </ul>

TEACHING UNIT 7 (SEVENTH WEEK):

**EMERGENCIES IN PEDIATRICS NEPHROLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Electrolyte and acid-base balance disorders in a critically ill pediatric patient</li> <li>• Acute kidney failure and methods of renal function replacement in the pediatric intensive care unit</li> </ul>	<ul style="list-style-type: none"> <li>• Correction of electrolyte and acid-base disorders</li> <li>• Methods of renal function replacement in the pediatric intensive care unit</li> <li>• Emergency treatment for hypertensive crisis</li> </ul>

- Hypertension in the pediatric intensive care unit

TEACHING UNIT 8 ( EIGHT WEEK):

**EMERGENCIES IN PEDIATRICS NEFROLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Urin tract infection</li> <li>• Renal colic and stones</li> <li>• Urin abnormalities (blood, protein)</li> </ul>	<ul style="list-style-type: none"> <li>• Emergency menagment of children with acute glomerulonephritis, nephrotic and nephritic syndrome</li> <li>• Tools for the diagnosis of rnal disease</li> </ul>

TEACHING UNIT 9 (NINTH WEEK):

**EMERGENCIES IN PEDIATRICS ENDOCRINOLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Urgent conditions in endocrinology and metabolic diseases</li> <li>• Nutrition of a critically ill child;</li> <li>• Congenital metabolic diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction to students with anamnestic data and clinical findings in congenital metabolic diseases</li> <li>• Presentation of laboratory algorithms in diagnosis of endocrinology and metabolic diseases</li> </ul>

TEACHING UNIT 10 (TENTH WEEK):

**EMERGENCIES IN PEDIATRICS ENDOCRINOLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Thyrotoxicosis</li> <li>• Hypoglycemia</li> <li>• Hypocalcemia</li> <li>• Congenital adrenal hyperplasia</li> <li>• Diabetic ketoacidosis</li> </ul>	<ul style="list-style-type: none"> <li>• Therapy in acidobase balance disorders</li> <li>• Endocrine emergency : recognizing signs and symtomes             <ul style="list-style-type: none"> <li>• Menagment and treatment in pediatric endocrine emergencies</li> <li>• Metabolic acidosis treatment</li> </ul> </li> </ul>



TEACHING  
UNIT 11  
(ELEVENTH  
WEEK):

**EMERGENCIES IN PEDIATRICS HEMATHOLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Thromboembolism in critically ill pediatric patients</li> <li>• Acute anemia</li> <li>• Thrombocytopenia</li> <li>• Transfusion of blood and blood derivatives</li> </ul>	<ul style="list-style-type: none"> <li>• General guidelines for blood derivatives</li> </ul>

TEACHING UNIT 12 ( TWELFTH WEEK):

**EMERGENCIES IN PEDIATRICS HEMATHOLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Hematological and oncological problems in intensive care units</li> <li>• febrile neutropenia</li> <li>• Hyperleukocytosis</li> <li>• DIC</li> <li>• Superior vena cava obstruction</li> <li>• Tumour lysis syndrome</li> </ul>	<ul style="list-style-type: none"> <li>• Bleeding assessment</li> <li>• Treatment DIC</li> <li>• Diagnosis and management of oncologic emergencies</li> </ul>

TEACHING UNIT 13 ( THIRTEENTH WEEK ):

**EMERGENCIES IN PEDIATRICS GASTROENTEROLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Acute liver failure and Rey's syndrome</li> <li>• Acute abdomen</li> <li>• Volvulus</li> <li>• Peritonitis</li> <li>• Necrotizing enterocolitis</li> </ul>	<ul style="list-style-type: none"> <li>• Assess for signs and symptoms of an acute abdomen</li> <li>• Imaging techniques of the GIT</li> <li>• Initial treatment of children with acute abdomen</li> </ul>

TEACHING UNIT 14 ( FOURTEENTH WEEK ):

**EMERGENCIES IN PEDIATRICS GASTROENTEROLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"> <li>• Foreign bodies in the digestive tract</li> <li>• Gastrointestinal hemorrhage</li> <li>• Pancreatitis</li> <li>• Gastroenteritis and severe dehydration</li> </ul>	<ul style="list-style-type: none"> <li>• Paediatric gastrointestinal endoscopy</li> <li>• Treatment and management</li> </ul>

TEACHING UNIT 15 ( FIFTEENTH WEEK ):

**EMERGENCIES IN PEDIATRICS NEONATOLOGY**

Lectures: 2 hours	Practice: 1 hours
<ul style="list-style-type: none"><li>• Neonatal sepsis</li><li>• Hypothermia</li><li>• Perinatal asphyxia</li><li>• CPR of newborn</li><li>• Respiratory distress</li><li>• Seizure in newborn</li><li>• Hypoglycemia</li><li>• Shock in newborn</li></ul>	<ul style="list-style-type: none"><li>• The most important symptoms and signs, laboratory and image tests to identify critically ill infant</li><li>• Rapid assessment and management of newborn life-threatening conditions</li></ul>

## WEEKLY COURSE SCHEDULE

COURSE	FRIDAY
<b>INTENSIVE CARE AND THERAPY IN PEDIATRICS</b> (2+1)	<b>LECTURES</b> <b>08:00-10:15</b> (H44) <b>PRACTICE*</b> <b>11:00 - 11:45</b> (Clinic for Pediatrics)

<b>module</b>	<b>week</b>	<b>type</b>	<b>method unit name</b>	<b>teacher</b>
<b>1</b>	<b>1</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS PULMONOLOGY</b>	Prof. dr Andjelka Stojkovic
<b>1</b>	<b>1</b>	<b>P</b>		Prof. dr Andjelka Stojkovic
<b>1</b>	<b>2</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS ALLERGOLOGY</b>	Prof. dr Andjelka Stojkovic
<b>1</b>	<b>2</b>	<b>P</b>		Prof. dr Andjelka Stojkovic
<b>1</b>	<b>3</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS CARDIOLOGY</b>	Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>3</b>	<b>P</b>		Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>4</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS CARDIOLOGY</b>	Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>4</b>	<b>P</b>		Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>5</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS NEUROLOGY</b>	Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>5</b>	<b>P</b>		Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>6</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS NEUROLOGY</b>	Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>6</b>	<b>P</b>		Asst. Prof. dr Marija Radovanovic
<b>module</b>	<b>week</b>	<b>type</b>	<b>method unit name</b>	<b>teacher</b>

<b>1</b>	<b>7</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS NEFROLOGY</b>	Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>7</b>	<b>P</b>		Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>8</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS NEFROLOGY</b>	Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>8</b>	<b>P</b>		Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>9</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS ENDOCRINOLOGY</b>	Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>9</b>	<b>P</b>		Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>10</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS ENDOCRINOLOGY</b>	Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>10</b>	<b>P</b>		Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>11</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS HEMATOLOGY</b>	Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>11</b>	<b>P</b>		Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>12</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS HEMATOLOGY</b>	Asst. Prof. dr Marija Radovanovic
<b>1</b>	<b>12</b>	<b>P</b>		Asst. Prof. dr Marija Radovanovic
<b>module</b>	<b>week</b>	<b>type</b>	<b>method unit name</b>	<b>teacher</b>

<b>1</b>	<b>13</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS GASTROENTEROLOGY</b>	Prof. dr Biljana Vuletic
<b>1</b>	<b>13</b>	<b>P</b>		Prof. dr Biljana Vuletic
<b>1</b>	<b>14</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS GASTROENTEROLOGY</b>	Prof. dr Biljana Vuletic
<b>1</b>	<b>14</b>	<b>P</b>		Prof. dr Biljana Vuletic
<b>1</b>	<b>15</b>	<b>L</b>	<b>EMERGENCIES IN PEDIATRICS NEONATOLOGY</b>	Asst. Prof. dr Sanja Knezevic
<b>1</b>	<b>15</b>	<b>P</b>		Asst.Prof. dr Sanja Knezevic