

## SYLLABUS

<b>Subject:</b>	<b>EXAMINATION METHODS IN CLINICAL BIOCHEMISTRY</b>		
<b>Field of study:</b>	<i>General Medicine</i>	<b>Degree of study:</b>	<i>III.</i>
<b>Study programme:</b>	<i>Clinical Biochemistry</i>	<b>Form of study:</b>	<i>Internal / External</i>
<b>Subject evaluation:</b>	<i>Exam</i>	<b>Subject type:</b>	<i>Compulsory course</i>

Department: **Department of Medical and Clinical Biochemistry UPJŠ FM**

<b><i>Lectures and seminars</i></b>	
<b>Introduction to clinical biochemistry</b>	
<ul style="list-style-type: none"> <li>- Clinical biochemistry, laboratory medicine - explanation of terms</li> <li>- Pre-analytical requirements, biological material</li> </ul>	
<b>Collection of biological material and interpretation of results</b>	
<ul style="list-style-type: none"> <li>- Organization of work in a medical laboratory – excursion</li> <li>- Collection of venous blood - pre-analytical errors</li> <li>- Interpretation of results - reference intervals, biological variability, sensitivity and specificity</li> </ul>	
<b>Basic laboratory parameters in emergency medicine</b>	
<ul style="list-style-type: none"> <li>- Sodium, potassium, ABR parameters</li> <li>- Laboratory signs when changing the circulating volume</li> </ul>	
<i>Case reports</i>	
<b>Diabetes mellitus</b>	
<ul style="list-style-type: none"> <li>- Hormonal regulation of glucose metabolism</li> <li>- Insulin resistance, metabolic syndrome</li> <li>- Diagnostic criteria and monitoring of diabetics</li> </ul>	
<i>Case reports</i>	
<ul style="list-style-type: none"> <li>- Controlled and uncontrolled DM, complications of DM</li> </ul>	
<b>1<sup>st</sup> Revision test</b>	
<b>Biochemical examinations in liver diseases</b>	
<ul style="list-style-type: none"> <li>- Liver function in homeostasis</li> <li>- Liver examination - hepatocellular and cholestatic enzymes</li> <li>- Markers of detoxification function disorders, markers of proteosynthesis</li> </ul>	
<i>Demonstration and evaluation of patients' biochemical results:</i>	
<ul style="list-style-type: none"> <li>- Jaundice - differential diagnosis</li> <li>- Acute and chronic liver failure</li> </ul>	
<b>Kidneys</b>	
<ul style="list-style-type: none"> <li>- Urine production, hormonal regulation (aldosterone, ADH)</li> <li>- Urine examination: proteinuria, hematuria, glycosuria</li> <li>- Examination of glomerular filtration</li> <li>- Urine test</li> </ul>	
<i>Case reports</i>	
<b>Inflammatory markers</b>	
<ul style="list-style-type: none"> <li>- Local and systemic inflammatory response (SIRS)</li> <li>- Sepsis, multiorgan dysfunction and failure syndrome (MODS, MOFS)</li> <li>- Biochemical inflammatory markers</li> <li>- Diagnosis and monitoring of sepsis</li> </ul>	
<i>Case reports</i>	
<b>Cardiac markers</b>	
<ul style="list-style-type: none"> <li>- Acute coronary syndrome</li> <li>- Diagnosis of heart failure - natriuretic peptides</li> <li>- Lipids - risk factors for heart disease</li> </ul>	
<i>Demonstration and evaluation of biochemical images of patients:</i>	

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<ul style="list-style-type: none"><li>- Biochemical picture of the inflammatory reaction - APP, CRP, procalcitonin, cytokines</li><li>- Acute myocardial infarction</li></ul> <p style="text-align: right;"><b>2<sup>nd</sup> Revision test</b></p>
<p><b>Blood count</b></p> <ul style="list-style-type: none"><li>- Erythrocytes, differential diagnosis of anemia</li><li>- Leukocytes - the most common pathologies</li><li>- Platelets - the most common pathologies</li></ul> <p><i>Demonstration and evaluation of laboratory findings:</i></p> <ul style="list-style-type: none"><li>- Examples of anemia</li><li>- Leukocytosis</li></ul>
<p><b>Examinations of coagulation</b></p> <ul style="list-style-type: none"><li>- Principle of coagulation tests and their clinical significance</li><li>- Basic tests used in the diagnosis of coagulation disorders</li><li>- Preoperative assessment of hemostasis in the patient</li><li>- Monitoring of anticoagulant therapy</li></ul> <p><i>Demonstration and evaluation of biochemical images of patients:</i></p> <ul style="list-style-type: none"><li>- Examples of anemia</li><li>- Bleeding conditions</li><li>- Preoperative examination of the patient</li></ul> <p style="text-align: right;"><b>3<sup>th</sup> Revision test</b></p>
<p><b>Bone metabolism - markers of bone metabolism</b></p> <ul style="list-style-type: none"><li>- Regulation of Ca and P metabolism</li><li>- Disorders associated with Ca, P</li><li>- Biochemical marker of bone metabolism</li></ul>