
	UNIVERSITY OF BANJA LUKA FACULTY OF MEDICINE				
	UNDERGRADUATE STUDIES				
	Study Programme of	MEDICINE			
Course Unit Name	Medical Biochemistry and Chemistry				
Type of Course Unit	General Education				
Course Unit Code	Course Unit Status	Semester	Class Workload	Number of ECTS	
TO BE DESIGNATED	COMPULSORY	III and IV	III: 3L+3P IV: 3L+4P	13	
Members of Staff	Prof. Dr Marija Matić, Assist. Prof. Dr Vesna Ćorić, Dr Žana Radić Savić, teaching assistant Prof. Dr Snežana Uletilović				
Eligibility Requirements				Form of Requirements	
Course units from the previous year of study must be passed.				As provided by the Rules of the First-Cycle Studies	
Goals of the Course Unit					
<p>Medical biochemistry and chemistry enable students of the second year to get to know the biochemical aspects of the functioning of a healthy organism, covering the cell, tissue and organism. Medical students thus acquire knowledge that will aid in their understanding of the physiological, pathophysiological and pathobiochemical processes in the healthy and the diseased human organism.</p>					
Learning Outcomes (knowledge acquired):					
<p>Knowledge acquired during classes in biochemistry will provide a medical doctor to understand the pathogenetic mechanisms of various diseases originating at the level of the genome, enzymes (enzymopathy), cell and tissue damage (apoptosis, necrosis, free radicals). Having adopted this knowledge, students will be able to recognize possible causes of pathological states at the level of various tissues, determine the type of patient material for establishing diagnoses, and properly interpret a biochemical laboratory result.</p> <p>Also, through working in laboratory conditions, the students will get to know the basic concepts of working in biochemical laboratories. By independently carrying out practical tasks, the concept of which is adapted to clinical biochemistry, they get to know diagnostic methods, in preparation for properly using and interpreting these methods in their future work.</p>					
Contents of the Course Unit:					
<p><i>Theoretical training:</i></p> <p>Chemistry: solutions, chemical reactions, structure of proteins, lipids, carbohydrates.</p> <p>Medical biochemistry: enzymology, general aspects of the metabolism, carbohydrate metabolism, lipid metabolism, protein and nucleic acid metabolism, organization and functioning of the eukaryotic genome, signal pathways, DNA structure and organization, hierarchy of the endocrine system, biochemical characteristics of individual tissues.</p> <p><i>Practical classes: Practicals, Other forms of teaching</i></p> <p>Biochemical laboratory diagnostic methods: automated pipetting; making solutions; deriving methods for identifying proteins and sugars in solutions (bodily fluids); use of the colorimeter and knowledge of determining the component concentration in a tested sample (using the standard curve or molar absorption coefficient); centrifuging; biochemical methods for quantifying the concentration of glucose, triacylglycerol, cholesterol, creatinine, urea, bilirubin, uric acid, electrolyte concentration; measurement of enzyme activity in bodily fluids; getting to know the specificities of testing various bodily fluids (urine).</p>					
Teaching Methods:					
The classes are given in the form of lectures, practicals, midterms, office hours, and independent student work					
Literature:					

1. Ензимологија кроз питања и одговоре, Симић Т, Савић радојевић А., Пљеша Ерцеговац М., Медицински факултет, Београд, 2008
2. Енергетски метаболизам кроз питања и одговоре, Марковић И., Исаковић А. Медицински факултет, Београд, 2008
3. ДНК, РНК и синтеза протеина кроз питања и одговоре, Петронијевић Н., Мисирлић Денчић С. Медицински факултет, Београд, 2008
4. Биохемијске карактеристике преноса сигнала кроз питања и одговоре, Симић Т.,Петронијевић Н., Марковић И., Исаковић А., Радоњић Н. Медицински факултет, Београд, 2008
5. Медицинска биохемија-уџбеник за студенте медицине 1. дио. Исаковић А, Симић Т, Ђуричић Б. Издавач Медицински факултет Универзитета у Београду, Београд, 2017.
6. Марксове основе медицинске биохемије. М. Lieberman, A.D. Marks, C. Smith. Издавач: Data Status, Београд, 2008.

Examination Form: ?

Pre-Exam Duties		Final Exam		Total Points
Chemistry	10			100
Midterm 1	10	Oral / Written	50	
Midterm 2	10			
Practical test	20			

Note for the Course Unit:

Syllabus Designer: Prof. Dr Marija Matić