

1.	Subject	CLINICAL BIOCHEMISTRY		
2.	Code	OM 424		
3.	Study Program	General medicine		
4.	Organizing Institution (Unit, Institute, Chair, Department)	UKIM-Faculty of Medicine Department of Biochemistry and Clinical Biochemistry		
5.	Educational degree (first or second cycle)	Integrated cycle		
6.	Study year /semester	Fourth/VIII	7.	Number of credits
				1.5
8.	Responsible teacher	Prof. Jasna Bogdanska The lectures are given by the professors, members of the Department.		
9.	Preconditions:	Completed Biochemistry 2 course		
10.	Teaching goals of the study program (competencies):			
	<ul style="list-style-type: none"> • To understand and to apply the laboratory findings in the diagnosis of various diseases; • To prepare seminar papers (case reports) related to laboratory parameters important for clinical practice and differential diagnosis 			
11.	Contents of the study program:			
	Theoretical course:			
	<ul style="list-style-type: none"> ✦ Clinical enzymology; ✦ Plasma proteins and their roles in diagnosis of various disease; ✦ Hyperlipoproteinemia , atherosclerosis, CAD, hypolipoproteinemia; <ul style="list-style-type: none"> • Liver function tests; jaundice, cirrhosis; • Clinical biochemistry of renal disease; biochemical parameters in diagnosis of kidney disease, ABI, HBI; • Tumor markers in diagnosis and prognosis of malignity disease; • Diabetes mellitus; • Neonatal screening; • Fluid and electrolyte balance ; • Biological factors that influence biochemical parameters. 			
	Practical course:			
	<ul style="list-style-type: none"> ✦ Preparation and oral presentation of seminar paper; ✦ Visit to a clinical laboratory. 			

12.	Methods of studying: class room oriented lectures, interactive lectures, group work, practical training, seminar paper.		
13.	Total no. of hours:	45 hours	
14.	Distribution of the available time		
15.	Type of educational activity	15.1	Lectures-theoretical course 30 hours
		15.2	Practicals (laboratory, clinical), seminars, team work 4 hours 11 hours Seminars
16.		16.1	Project assignments
	Other types of activities	16.2	Individual tasks
		16.3	Home studying 15 hours
17.	Assessment of knowledge: points		
	17.1		
		Final exam	Subject: Clinical Chemistry Oral exam min.-max. 37-65 points
	17.2	Seminar work/project (presentation: written and oral)	Seminar works min.-max. 1-7.5 points
	17.3	Active participation	Theoretical course Practical course min.-max. points 21-22.5 points 1-5
18.	Knowledge assessment criteria: (points/grade)	up to 59 points	5 (five) F
		60 to 68 points	6 (six) E
		69 to 76 points	7 (seven) D
		77 to 84 points	8 (eight) C
		85 to 92 points	9 (nine) B
		93 to 100 points	10 (ten) A

19.	Criteria for obtaining a signature and taking the final exam	Conditional criteria for assessment of knowledge: In order to receive the professor's signature for the course, and to enroll the oral exam the students are requested to actively participate in the planned activities.			
20.	Language of the course	Macedonian			
21.	Method for evaluation of the quality of education	Anonymous student's evaluation of the subject, teachers and collaborators involved in the educational activities			
22.	Literature				
	Mandatory textbooks				
22.1		Author	Title	Publisher	Year
	1	Gaw A, et al.;	Clinical Biochemistry	Churchill Livingstone: Elsevier	2008
	Additional literature				
22.2		Author	Title	Publisher	Year