

1.	Subject	COMPUTER PROCESSING OF LABORATORY DATA			
2.	Code	MLD – 317			
3.	Study program:	Three-year professional studies of medical laboratory diagnostics			
4.	Conducted by	UKIM – Medical faculty Department of Human Genetics			
5.	Degree of education (first or second cycle)	First cycle			
6.	Academic year/semester	III/V	7.	Credits	2
8.	Professor	Prof. d-r Aleksandar Petlichkovski			
9.	Prerequisite	Fulfilled condition for enrolment into III year			
10.	Goals	<p>The students will be able to:</p> <ul style="list-style-type: none"> • Understand and explain the use of computer in measurement techniques and their connection to auto-analyzers • Understand the planning and connecting of LIS and the standardization of laboratory data • Explain the work of the LIS program for certain search, create a work order • Understand the work with samples with bar codes • Explain the work with laboratory data: their saving, modeling, protection, safety, secrecy and to approach the work with the data ethically • Organize laboratory data bases, search them and compare data • Understand and actively use LIS to realize medical files and financial reports • Understand contemporary information communication technologies in the laboratory work process, electronic work and telemedicine • Understand and use scientific and professional literature from this field 			
11.	Content summary:	<p>Theoretical and practical lessons:</p> <ul style="list-style-type: none"> • Use of computers in measurement techniques: term laboratory information system (LIS) • Connecting the automatic laboratory equipment and a computer • Organization forms of LIS, organization and standardization of laboratory data • Accepting laboratory data in a computer: adding a request for a search, work order, identification of a sample, creating a bar code, adding and examination of results • Saving laboratory data: organizing laboratory data bases and modeling data • Safety risks and trespassing protection: safety and ethical questions, protecting data secrecy • Telemedicine <p>Practical lessons:</p> <ul style="list-style-type: none"> • Independent design of a order (referral) for searching in MS Word • Making financial reports in MS Excel • Modeling laboratory data and creating a table in MS Access • Work with LIS software for inserting data (offline) • Work with LIS software for inserting data and bar coding • Work with LIS program for searching data in laboratory base • Preparing a presentation in MS PowerPoint of a scheme of the organization of automatic 			

	work in a clinical laboratory		
12.	Teaching methods: interactive theoretical lessons, practical lessons		
13.	Total classes:	45	
14.	Organization	45 theoretical, practical lessons, seminars	
15.	Types of teaching activities	15.1	Lessons: theoretical classes 15
		15.2	Practical lessons 20
16.	Other types of activities	16.1	Practice
		16.2	Seminars
		16.3	Learning at home
17.	Knowledge assessment		Points
	17.1	Tests	
	17.2	Final exam	Written part points 24 – 40 min.-max.
			Oral part points 18 – 30 min.-max.
17.3	Active participation	Theoretical lessons points 6 – 10 min.-max.	
		Practical lessons points 12 – 20 min.-max.	
18.	Grading criterion (points/grades)	Up to 59	5 (five) F
		60-68	6 (six) E
		69-76	7 (seven) D
		77-84	8 (eight) C
		85-92	9 (nine) B
		93-100	10 (ten) A
19.	Requirements for obtaining a signature and attending the final examination	To attend the final exam, the student must pass the mid-term exams or to gain minimum 30% of the total points in the mid-term exams. During the exam session, the student first attends the mid-term exams (that were not passed) and then the final exam. The final grade is formed according to the grading criterion, and is based on the sum of the points of all the activities, mid-term exams and final exam.	
20.	Language	Macedonian	
21.	Method of evaluating the quality of the lessons	Students' anonymous evaluation of the subject, the professors and collaborators who participate in the lessons.	
22.	Literature:		
	22.1	Mandatory literature	
		1.	Prof. d-r Aleksandar Petlichkovski, Authorized lectures – Computer Processing of Laboratory Data, University Ss. Cyril and Methodius, Medical Faculty, Skopje, 2019
	22.2	Additional literature	
		1.	