1.	Subject	**BIOSTATISTIC WITH INFORMATICS**			
2.	Code	DA – 124			
3.	Study program:	Three-year professional studies for graduate obstetricians			
4.	Conducted by	Department of Epidemiology and Biostatistics with Medical Informatics UKIM – Medical faculty, Skopje			
5.	Degree of education (first or second cycle)	First cycle			
6.	Academic year/semester	First/II	7.	Credits	2
8.	Professor	Chair of the department: Prof. Dr. Vesna Velikj-Stefanovska The lessons are held by the following members of the Department of Epidemiology and Biostatistics with Medical Informatics: Prof. Dr. Vesna Velikj Stefanovska Prof. Dr. Rozalinda Isjanovska Prof. Dr. Beti Zafirova Ivanovska			
9.	Prerequisite	None			
10.	Goals	-Gaining knowledge of the basics of medical statistics, the points, terms, units of measurement -Gaining theoretical and practical knowledge for analysis of simple statistical series with appropriate statistical methods and interpretting the results -Gaining theoretical and practical knowledge from the demographic and vital statistic field -Defining health data, organization and protection of it -Description of health and laboratoric information systems -Using a computer for communication and searching data on the internet -Daily use of information and communication technologies in providing health protection -Using computers in health care for personal and educational purposes			
11.	Content summary: Theoretical lessons: - Descriptive analysis (planning a statistical research; methods of gathering, grouping and presenting data; use of relative numbers; statistical mass structure analysis according to numerical characteristics; methods of sampling) - hypotheses (t-test) - Analysis of variance -Pearson X2 – test - Regression analysis and linear correlation - Non-parametric tests – dependent samples -Dynamic analysis of occurences -Demographic statistics and vital statistics - WINDOWS operating system, Microsoft office: word, excel, power point; email, internet, web search - Health/medical informatics: entity, atributes, types of data, units of measurement, organization of digital information, codex of traits - World databases and searching them - Safety and data protection - Health and laboratoric information systems - Telemedicine			

	Practical lessons: -Ratios, proportions, rates, indexes of dynamics -Modus and median -Student t-test -X2 – test -Correlation -Linear trends of time series -Seasonal index - Practical use of demographic and vital statistics terms -Basics of information tecnology -Biomedical databases – sources, searches, interpretation -Microsoft office: word, excel, power point				
12.	Teaching methods: Interactive lessons, practical lessons, seminars				
13.	Total classes:		45		
14.	Organization		60 lessons Credits 2x30 lessons for 1 credit =60 60- 30 theoretical lessons, practical lessons and seminars = 30 lessons learning at home		
15.	Types of teaching activities		15.1	Lessons: theoretical classes	10
			15.2	Practical lessons (laboratory, clinical), seminars, team work	20 practical lessons 20 seminars
16.	Other types of activities		16.1	Learning at home	30
17.	Knowledge assesment		Points		
	17.1	Tests	Min.-max Regular knowledge assessment* 18 - 30 Mid-term exams – 2 written tests The regular knowledge assessment consists of: -Exercises of selected parts (dynamic index; arithmetic average, standard deviation and coefficient of variation; modus median; prediction of parameters of sampling) -Exercises of selected parts (student t-test, X2 –test; correlation; linear trend of time intervals; seasonal index) -Microsoft office: word, excel, power point, biomedical databases of information The students can gain 9-15 points in one mid-term exam		
		Final exam	Min. – Max. Oral part 36 - 52		
	17.2	Paper/project (written/oral presentation)	**Min. – Max.** Papers 0 - 3		
	17.3	Active Participation	Min. – Max. Theoretical lessons 1 - 5		

			Practical lessons 5 - 10 Attending the theoretical lessons 51%-60%=1 point 61%-91%= 2 points 91%-100% = 3 points Practical lessons (24 groups of lessons with the duration of 3 hours)
18.	Grading criterion (points/grades)	Up to 59 points	5 (five) F
		From 60 to 68 points	6 (six) E
		From 69 to 76 points	7 (seven) D
		From 77 to 84 points	8 (eight) C
		From 85 to 92 points	9 (nine) B
		From 93 to 100 points	10 (ten) A
19.	Requirements for obtaining a signature and attending the final examination	To obtain a signature, the student must gain minimum points from attending the theoretical and practical lessons. To attend the final exam, the student must pass the mid-term exams or to gain minimum 30% of the points. In the exam session, the student must pass the mid-term exams, and then attend the final exam. The final grade for the subject is formed according to the table for grading, and is based on the sum of the points from all the activities, the mid-term exams and the final exam.	
20.	Language	Macedonian	
21.	Method of evaluating the quality of the lessons	Anonymous student evaluation of the subject, the professors and the collaborators who hold the lessons.	
22.	Literature		
	22.1	Mandatory literature	
		1.	Danilovski D., Orovcanec N., Vasilevska K., Taushanova B., Velikj Stefanovska V., Isjanovska R., Zafirova Ivanovska B., Pavlovska I. Medical Statistics and informatics – Three-year professional studies, University Ss. Cyril and Methodius, Medical Faculty, 2015
		2.	Danilovski D., Orovcanec N., Vasilevska K., Taushanova B., Velikj Stefanovska V., Isjanovska R., Zafirova Ivanovska B., Pavlovska I., Medical statistics and informatics – practicum for three-year professional studies, University Ss. Cyril and Methodius, Medical faculty, 2017
		3.	Danilovski D., Orovcanec N., Vasilevska K., Taushanova B., Velikj Stefanovska V., Isjanovska R., Zafirova Ivanovska B., Pavlovska I., Biostatistics, University Ss.Cyril and Methodius, Medical Faculty, 2012
		4.	Kern J., Petrovechki M., Medical Informatics, Zagreb, Medicinska naklada, 2009
		5.	Hercigonja-Szekeres M., Medical Informatics, handbook,

			Zdravstveno sveleuchilishte,e-stranice Katedreza informatiku Zagreb, 2012
		6.	Somek M., Informatics Handbook, Zdravstveno sveleuchilishte,e-stranice Katedreza informatiku Zagreb, 2010