1.	Subject	BIOSTATISTICS WITH MEDICAL INFORMATICS			
2.	Code	OM 215			
3.	Study Program	General medicine			
4.	Organizing Institution (Unit, Institute, Chair, Department)	UKIM-Faculty of Medicine Cathedra of epidemiology and biostatistics with medical informatics.			
5.	Educational degree (first or second cycle)	Integrated cycle			
6.	Study year/semester	II year / III semester	7.	Number of EKTS credits	3
8.	Responsible teacher	Head of department/cathedra Prof. Dr. Vesna Velic Stefanovska Teaching is conducted by following members of cathedra of epidemiology and biostatistics with medical informatics: Prof. Dr. Dragan Danilovski Prof. Dr. Kristin Vasilevska Prof. Dr. Biljana Tausanova Prof. Dr. Vesna Velic Stefanovska Prof. Dr. Rozalinda Isjanovska			

		Prof. Dr. Beti Zafirova Ivanovska Senior Research assistant prof. Dr. Irina Pavlovska
9.	Preconditions for taking the subject	None

10.	**Teaching goals of the Aims of study program (competencies):**
	1. Acquiring knowledge of the basics of medical statistics, terminology, measuring units. 2. Acquiring theoretical and practical knowledge of analyses of statistical series through implementation of appropriate statistical methods. 3. Acquiring theoretical and practical knowledge of demographic and vital statistics and implementation of acquired knowledge in practice. 4. Acquiring theoretical and practical knowledge of the basis, concepts and application of medical informatics.
11.	**Content of the study program:** **Theoretical course:** • Descriptive analysis (plan of statistical research, methods of collection, grouping and presentation of data; use of relative numbers; analyses of structure of statistical mass according to numerical characteristics; method of sampling) • Distribution of frequency and probability (estimation of parameters of samples; standard error of mean and proportion • Hypothesis (t – test) • Analysis of variance • Pearson X^2 - test • Regression analysis and linear correlation • Measures of correlation based on ranked data • Non parameter tests – dependant samples • Research of dynamics of occurrences • Analyses of survival time • Demographic statistics • Vital statistics • Medical informatics **Practical course:** • Relations, proportions, rates, indexes, • Index of dynamics • Modus and median • Assessment of parameters of a sample • Student t-test • X^2 - test • Correlation • Assessment of proportions of the total statistical mass based on a sample • Linear trend of time series • Season index • Practical application of terms of demographic and vital statistics • Medical informatics

12.	**Methods of studying:**			
	Interactive teaching, practical course, seminars			
13.	**Total number of hours:**		90 hours	
			Credits 3 x 30 hours for 1 credit = 90 90 – 45 hour teaching, practical course and seminars = 45 hours home study	
14.	**Distribution of available time:**			
15.	**Type of educational activity**	15.1	Lectures-theoretical course	18 hours of teaching

		15.2	Practical (laboratory, clinical), seminars, team work	27 hours practical/seminars
16.	**Other types of activities**	16.1	Project assignments	. . . hours
		16.2	Individual tasks	. . . hours
		16.3	Home studying	45 hours
17.	**Assessment of knowledge:**			**points**
	17.1	Tests	Continuous tests points	min. - max. 18 - 30
			Continuous tests of knowledge (mid-term) consists of 2 written tests	
			Continuous tests relate to:	
			✦ Problems from selected parts (index of dynamics; arithmetic mean, standard deviation and variation coefficient; modus and median; assessment of parameters of sample)	
			✦ Problems from selected parts (student t-test; X^2- test; correlation; linear trend of time series; season index)	
			One mid-term test carries 9 – 15 points	

		Final exam	Oral exam	points	min.-max. 36 - 52
	17.2	Seminar work/project (presentation: written and oral)	Seminar work	points	min. – max. 0 - 3
	17.3	Active participation	Theoretical course Practical course	points points	min.- max. 1 - 5 5 – 10

Attendance at theoretical course

51% - 60% = 1 point

61% - 91% = 2 points

91% - 100% = 3 points

Practical course (24 practical course of 3 hours)

18.	**Knowledge assessment criteria:** (points/grade)	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.	**Criteria for obtaining a signature and taking the final exam**	Conditional criteria for assessment of knowledge:
		To obtain a signature, the student needs to acquire minimum points from attendance at seminars, theoretical and practical courses.
		To take the final exam, the student must pass the continuous tests or acquire a minimum of 30% of total number of points in the continuous tests, whereas during the exams session the student shall take the previously failed continuous tests, and then shall take the final exam.
		The assessment of the subject is established according to the

		table of marks, based on the sum of points from all activities,
		continuous tests and final exam.
20.	**Language of the course**	Macedonian
21.	**Method for evaluation of the quality of education**	Anonymous evaluation by students on the subject, teaching staff, and associates participating in the teaching.
22.	**Literature**	

		Mandatory textbooks			
22.1	No.	Author	Title	Publisher	Year
	1	James F. Jeckel, David L. Kac, Joan J. Elmor, Dorothea M. J. Wild	Epidemiology, biostatistics and preventive medicine	Tabernakul	2010
	2	Danilovski D., Orovcanec N., Vasilevska K., Taushanova B., Velic Stefanovska V., Isjanovska R., Zafirova Ivanovska B., Zdravkovska M., Pavlovska I.;	Practical teaching in Biostatistics	University "Ss. Cyril and Methodius" Medical faculty	2012

| | | 3 | Danilovski D., Orovcanec N., Vasilevska K., Taushanova B., Velic Stefanovska V., Isjanovska R., Zafirova Ivanovska B., Zdravkovska M., Pavlovska I.; | Biostatistics | University "Ss. Cyril and Methodius" Medical faculty | 2012 |