
		<b>UNIVERSITY OF EAST SARAJEVO</b> Faculty of Medicine					
		<b>Study program: medicine</b>					
		Integrated academic studies		III study year			
<b>Full subject title</b>		MEDICAL STATISTICS					
<b>Department</b>		Department of Primary Health Care and Public Health, Faculty of Medicine in Foča					
<b>Subject code</b>			<b>Subject status</b>		<b>Semester</b>		<b>ECTS</b>
ME-02-1-030-5			compulsory		V		4
<b>Professor/ -s</b>		Prof Natasa Milic, PhD; prof. Srdjan Masic, PhD					
<b>Associate/ -s</b>		Assist. Dragan Spaic, assist. Nina Rajovic					
<b>Number of lectures/ teaching workload (per week)</b>			<b>Individual student workload (in hours per semester)</b>			<b>Coefficient of student workload S<sub>0</sub><sup>1</sup></b>	
<b>L</b>	<b>E</b>	<b>SP</b>	<b>L</b>	<b>E</b>	<b>SP</b>	<b>L</b>	
1	2	0	1*15*1,67	2*15*1,67	0*15*1,67	1,67	
total teaching workload (in hours, per semester) 1*15 + 2*15 + 0*15 = 45			total teaching workload (in hours, per semester) 1*15*1,67+ 2*15*1,67+ 0*15*1,67= 75.15				
Total subject workload (teaching + student): 45 + 75 = 120 hours							
<b>Learning outcomes</b>		Mastering knowledge and skills in creating and collecting medical data, analyzing and making conclusions, generating, transmitting, storing and using information to address health problems. Knowledge gained during the course of teaching allows the medical doctor to be an active participant in the computerization of the health system, to evaluate their own work based on data and information obtained from practice, and for learning (especially continuous medical improvement). Acquired knowledge and skills are used in all medical disciplines during and after the completion of studies.					
<b>General competences</b>		They have acquired a systemic thinking approach as well as a structured approach to medical problems during their education. They are acquainted with methodology of scientific research. They are capable of acting in accordance with rational and scientific concepts and principles. They have an unbiased attitude towards new scientific methods in medicine. They are eager to collaborate with other medical professionals.					
<b>Preconditions</b>		Requirement for taking the exam: all passed exams from the previous year of study					
<b>Teaching methods</b>		Teaching under supervision consists of lectures, seminars, case studies and exercises (which include group discussions of predefined content, demonstration of different tools and software, and use of online resources (articles, books, databases)), consultations and exams.					
<b>Subject content per week</b>		<b>Lectures</b>  1. Introduction to medical statistics, Definition, development, classification, Statistical method and statistical methodology, Basic statistical concepts, Statistical set, observation units, observation features. 2. Data collation: grouping, tabulation, graphic display, frequency, frequency distribution. 3. Statistical description: Relative numbers, central tendency measures, variability measures. 4. Probability: basic concept, basic concepts, probability laws, computational operations with probability. 5. Binomial and normal distribution of probability. 6. Pattern: Pattern types, choice of observation units in the sample, random number plates, sample size. 7. Sample Estimation: Standard error, confidence intervals. 8. Statistical analysis: conclusion in statistics, probability of security, probability of error, level of significance. Definition and division of analytical methods. 9. Hypothesis Testing: Examination of Empirical Distribution Forms, Evaluation of Significance of Difference, Evaluation of Connection. Zero and labor hypothesis, choice of significance level, theoretical value of the methods, limit values tables, and statistical conclusions. Errors in conclusion. 10. Methods for estimating the significance of the difference - statistical tests. Parametric tests, Z-test, T-test. 11. Non-parametric ranking tests: test sign, equivalent pair test, ranking sum test.					

<sup>1</sup>The coefficient of student workload  $S_0$  is calculated as it follows:

- a) for the study programs not going through the licensing process:  $S_0 = (\text{total workload in semester for all of the subjects } 900 \text{ hrs} - \text{total teaching workload } L+E \text{ in semester for all of the subjects } 870 \text{ hrs}) / \text{total teaching workload } L+E \text{ in semester for all of the subjects } \text{ hrs} = \text{ }.$  Consult form content and its explanation.  
b) for the study programs going through the licensing process, it is necessary to use form content and its explanation.

	12. Non-parametric tests based on frequency analysis: Hi-square test; stacking test; contingency tables; Fischer test; median test; Mac-Nemer test				
	13. Linkage Testing: Definition, objective, application conditions. Diagram of dispersion, determination coefficient and coefficient of single linear correlation.				
	14. Linear regression and linear trend.				
	15. Non-parametric correlation, Spirman's correlation coefficient of rank.				
	<b>Exercises</b>				
	1. Data processing				
	2. Statistical description of data				
	3. Probability and distribution of probability				
	4. Population and sample				
	5. Estimation of population parameters and sample size				
6. Testing the hypothesis on population average values and proportions					
7. Testing the frequency hypothesis					
8. Testing the rankings hypothesis					
9. Correlation					
10.Regression					
11.Data, information and knowledge					
12. Searching bibliographic databases					
13. Informal and formal decision-making in medicine, Diagnostic tests					
14. Medical decision-selection of treatment and therapy					
15. Health Information System, Electronic Health Documentation					
<b>Compulsory literature</b>					
<b>Author/s</b>		<b>Publication title/Publisher</b>	<b>Year</b>	<b>Pages (from-to)</b>	
S. Janošević, R. Dotlić, J. Marinković		Medical statistics, Faculty of Medicine, Belgrade	2013	/	
<b>Additional literature</b>					
<b>Author/s</b>		<b>Publication title/Publisher</b>	<b>Year</b>	<b>Pages (from-to)</b>	
<b>Student responsibilities, types of student assessment and grading</b>	<b>Grading policy</b>			<b>Points</b>	<b>Percentage</b>
	Pre-exam activities				
	Lecture attendance			6.5	6.5%
	Exercise attendance			13.5	13.5%
	Positively evaluated seminar paper			10	10%
	colloquium			20	20%
	Final exam				
	Practical problem solution			20	20%
	test			30	30%
	TOTAL			100	100 %
<b>Web page</b>	<a href="http://infostat.mf-foca.edu.ba/index.php/studije-medicine/medicinska-statistika">http://infostat.mf-foca.edu.ba/index.php/studije-medicine/medicinska-statistika</a>				
<b>Certification date</b>	June 17th 2024				

\* the number of necessary rows is added by using insert mode