

Subject card

Subject name and code	Fundamentals of applications of statistics in medicine - laboratory exercises, PG_00154444						
Field of study	Medical Physics						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2024/2025		
Education level	postgraduate studies		Subject group		Obligatory subject group in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish Polish		
Semester of study	2		ECTS credits		4.0		
Learning profile	academic		Assessment form				
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Anita Dąbrowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	45.0	0.0	0.0	45
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		0.0		55.0	100
Subject objectives	Learning the basics of scientific research methodology in medicine. To familiarize the student with the method of description and analysis of statistical data, taking into account the specificity of biomedical process models. Acquiring the ability to use statistical methodology to solve research problems in medicine and health care. The student should be able to assess the usefulness and select the most appropriate statistical methods and tools to solve a given problem in the field of biomedical sciences.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[FIZMEDMU2_W13] knows the principles of using medical databases and consolidating these data scattered in several types of databases along with statistical analysis		The student knows the basics of scientific research methodology in medicine. The student knows methods of description and analysis of statistical data, taking into account the specificity of models of biomedical processes.		[SW4] test/exam - oral or written		
	[FIZMEDMU2_U13] is able to use medical databases and consolidate these data scattered in several types of databases and perform statistical analysis on these data		The student is able to use statistical methodology to solve research problems in medicine and health care. The student should be able to assess the usefulness and select the most appropriate statistical methods and tools to solve a given problem in the field of biomedical sciences.		[SU4] test/exam - oral or written [SU6] demonstration of practical skills		

Subject contents	Distribution of a continuous random variable. Distribution of a discrete random variable.		
	Determining confidence intervals for the mean and fractions.		
	Goodness-of-fit tests		
	Tests of significance of differences for independent samples.		
	Tests of significance of differences for dependent samples.		
	Non-parametric tests		
	Analysis of variance one-factor classification.		
	Analysis of variance multifactor classification.		
	Analysis of variance post hoc testing.		
	Non-parametric ANOVA.		
	Correlation analysis. Linear Regression. Other regression analyses.		
	Survival analysis. Multivariate analyses.		
Prerequisites and co-requisites	Not required		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Tests (2 or 3)	51.0%	100.0%
Recommended reading	Basic literature	Andrzej Stanisławski Przystępny kurs statystyki z zastosowaniem STATISTICA PL na przykładach medycznych. Tom 1, 2, 3 Statystyki podstawowe Kraków 2007 (wyd. 2)	
	Supplementary literature	Anna Baranowska, Elementy statystyki dla studentów uczelni medycznych", Oficyna Wydawnicza GiS, Wrocław, 2022	
	eResources addresses	Podstawowe http://www.statsoft.pl/textbook/stathome.html - Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Not required		
Work placement	Not applicable		

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