University of Gdańsk

Subject card

Subject name and code	Statistical methods in biology and medicine, PG_00203483						
Field of study	Medical Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research 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		
Semester of study	1		ECTS credits		3.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Włodzimierz Meissner				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	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	30		8.0		37.0	75
Subject objectives	To understand the basic concepts related to descriptive statistics and the verification of statistical hypotheses. To learn and understand methods of analysing numerical data. To acquire the ability to select methods for statistical analysis. To acquire skills in the use of computer statistical programs.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMEDMU2_W04] knows in-depth understanding the principles of planning research based on the achievements of biological and medical sciences, the principles of operation of equipment and apparatus used in medical biology research, and the principle of interpreting biological phenomena and processes based on empirical data in research work and practical activities	Selects and applies statistical analysis techniques and tools appropriate to the problems posed in the field of medical biology.	[SW4] test/exam - oral or written
[BIOLMEDMU2_W01] has an in-depth knowledge of scientific fields and disciplines relevant to medical biology and the studied specialty and knows their main development trends	Knows advanced statistical analysis tools relevant to the problems of the studied specialisation in medical biology.	[SW4] test/exam - oral or written
[BIOLMEDMU2_U03] is able to formulate and solve problems on the basis of the known laws and methods, including - using computer tools and statistical methods	He uses specialised computer software for statistical data analysis.	[SU4] test/exam - oral or written
[BIOLMEDMU2_K02] is ready to recognize the importance of knowledge in solving cognitive and practical problems and to seek expert advice when having difficulty solving a problem on his own	He thoroughly assesses his own competences related to the field of medical biology he is studying. He strives to continuously improve his competences.	[SK8] observation of student's independent or team work
[BIOLMEDMU2_U07] is able to show initiative and lead teamwork and cooperate in the planning and implementation of research tasks	He is able to plan and organise team work.	[SU8] observation of student's independent or team work
[BIOLMEDMU2_K08] is ready to lead the group and take responsibility for it	Able to work in a team, take responsibility for one's own work and that of others.	[SK8] observation of student's independent or team work

Subject contents

Descriptive statistics, statistical hypothesis testing, parametric and non-parametric tests, ANOVA, regression and correlation

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
	51.0%	33.0%
	51.0%	33.0%
	51.0%	34.0%

Recommended reading

Basic literature	Meissner W.2010. Przewodnik do ćwiczeń z przedmiotu metody statystyczne w biologii. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk
Supplementary literature	Stanisz A. 2006. Przystępny kurs statystyki z zastosowaniem STATISTICA PL na przykładach z medycyny. Tom 1. Statystyki podstawowe. StatSoft Polska, Kraków. Stanisz A. 2007.Przystępny kurs statystyki z zastosowaniem STATISTICA PL na przykładach z medycyny. Tom 2. Modele liniowe i nieliniowe. StatSoft Polska, Kraków. Ferguson G.A., Takane Y. 2008. Analiza statystyczna w psychologii i pedagogice. Wyd. III. Wydawnictwo Naukowe PWN, Warszawa.
eResources addresses	

Example issues/ example questions/ tasks being completed

Selection of appropriate tests to verify hypotheses about differences between means and distributions: for two and for multiple samples. Testing the relationship between variables using correlation coefficients and linear, multiple and segmented regression. Practical application of attendance analysis in biological research. Preparation and analysis of graphs based on statistical data.

Work placement

Not applicable

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