University of Gdańsk

Subject card

Subject name and code	Statistical methods in biology and medicine, PG_00207330		
Field of study	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
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	prof. dr hab. Włodzimierz Meissner	

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
[BIOLMU2_K06] is ready to take responsibility for assessing the risks arising from the research techniques used and creating ergonomic and safe working conditions	is responsible for the equipment entrusted to him and respects the work of others	[SK8] observation of student's independent or team work
[BIOLMU2_U05] is able to use statistical methods and IT techniques and tools to describe biological phenomena and analyze specialized data	selects and applies statistical techniques and tools appropriate to the problems of the biological sciences specialty studied	[SU4] test/exam - oral or written
[BIOLMU2_W02] has a thorough knowledge and applies the principle of rigorous, empirically based interpretation of biological phenomena and processes in research and practical activities	interprets phenomena and facts using rigorous, verifiable methods	[SW4] test/exam - oral or written
[BIOLMU2_W07] knows specialized bioinformatics tools, useful in solving problems in the studied speciality of biological sciences	works in a team and leads the work of a small team in the statistical analysis of biological data	[SW4] test/exam - oral or written
[BIOLMU2_W06] knows statistical tools appropriate to the problems of the studied speciality of biological sciences	has knowledge of methods of descriptive statistics, analysis of associations between variables, formulation of statistical hypotheses and their testing	[SW4] test/exam - oral or written
[BIOLMU2_U06] is able to use the acquired specialist knowledge in the field of biological sciences to interpret the collected empirical data and draw conclusions	use of specialised computer software	[SU4] test/exam - oral or written

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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