

Subject card

Subject name and code	Statistics for oceanographers - lecture, PG_00159304						
Field of study	Oceanography						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	undergraduate 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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		2.0		
Learning profile	academic		Assessment form				
Conducting unit	Katedra Biologii Morza i Biotechnologii -> Faculty of Oceanography and Geography						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Maciej Mańko				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15		10.0		25.0	50
Subject objectives	The aim of the course is to provide students with basic knowledge of general statistics in the field of statistical description and inference methods. The methods discussed will provide students with the basis for deeper study of statistical methods as part of specialized subjects taken during their studies.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[OCEANL3-K03] is ready to exercise caution and criticism in accepting information from scientific literature, the Internet and other media relating to natural sciences		Is ready to make independent decisions regarding the application of the acquired statistical methods and to critically evaluate the obtained results of statistical research (program content of the lecture and exercises).		[SK4] test/exam - oral or written		
	OCEANL3-U07		Able to communicate using basic terminology in the field of statistics; explain the meaning of basic statistical terms and their interpretations in social communication		[SU4] test/exam - oral or written		
	OCEANL3-W01		Knows and understands the terminology of methods at an advanced level statistics used in oceanography		[SW4] test/exam - oral or written		

Subject contents	1. Introductory issues - The concept and methods of statistics, applications of statistics; Stages of statistical research; Basic terminology; Measurement scales2. Data preparation and transformation; Descriptive statistics: measures of central tendency3. Dispersion measures, feature and probability distributions4. Verification of statistical hypotheses (formulation of hypotheses, level of significance, types of statistical tests); Interval estimation5. Multi-way tables, frequency analysis; Two-sample tests6. Linear regression (estimation and interpretation of function parameters, assessment of fit, testing the significance of the regression coefficient) and correlation (Pearson's linear correlation coefficient and testing its significance; Spearman's rank correlation coefficient and testing its significance); Estimation and interpretation of trend function parameters7. Multiple regression; Introduction to multivariate analyses; Interpretation of ordination charts and classification trees8. Presentation of statistical data: series, tables, charts		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Grade from exam	51.0%	100.0%
Recommended reading	Basic literature	Łomnicki A., 2003, Introduction to statistics for naturalists. PWN WarszawaRabiej M., 2018, Statistical analyzes with Statistica and Excel. HelionRabiej M., 2012, Statistics with the Statistica program. HelionMeissner W., 2014, Statistical methods in biology. Subject practice guide. University of Gdańsk Publishing HouseGórecki T., 2011, Basics of statistics with examples in R, BTC Publishing, Legionowo;	
	Supplementary literature	Kala R., Statistics for naturalists. Ed. AR Poznań 2002Stanisz A., 2006, Accessible statistics course based on the STATISTICA PL program with examples from medicine (Volume I), StatSoftSobczyk M., 2003, Statistics. Theoretical foundations, examples - tasks, UMCS Publishing House, LublinKoronacki J., Mielniczuk J., 2018, Statistics for technical and natural sciences, PWN, WarsawKot S., Sokołowski A., Jakubowski J., 2011, Statistics, Ed. 2, PWN, Warsaw	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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