

**Subject card**

<b>Subject name and code</b>	Statistics for Oceanographers - lecture, PG_00205312						
<b>Field of study</b>	Oceanography						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2027/2028		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study Optional subject group		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	2	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	3	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>	Department of Marine Biology and Biotechnology -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Maciej Mańko				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	15		1.0		34.0	50
<b>Subject objectives</b>	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.						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>			<b>Method of verification</b>	
	[OCEANL3-U07] is able to communicate with the socio-economic environment, both verbally and in writing, on broadly understood specialized issues in oceanography		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] has an advanced knowledge and understanding of the terminology used in oceanography and related exact and natural sciences (in Polish and a selected foreign language)		Knows and understands the terminology of methods at an advanced level statistics used in oceanography			[SW4] test/exam - oral or written	
	[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	

Subject contents	<p>1. Introductory issues - The concept and methods of statistics, applications of statistics; Stages of statistical research; Basic terminology; Measurement scales  2. Data preparation and transformation; Descriptive statistics: measures of central tendency  3. Dispersion measures, feature and probability distributions  4. Verification of statistical hypotheses (formulation of hypotheses, level of significance, types of statistical tests); Interval estimation  5. Multi-way tables, frequency analysis; Two-sample tests  6. 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 parameters  7. Multiple regression; Introduction to multivariate analyses; Interpretation of ordination charts and classification trees  8. Presentation of statistical data: series, tables, charts</p>		
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	<p>Łomnicki A., 2003, Introduction to statistics for naturalists. PWN Warszawa  Rabiej M., 2018, Statistical analyzes with Statistica and Excel. Helion  Rabiej M., 2012, Statistics with the Statistica program. Helion  Meissner W., 2014, Statistical methods in biology. Subject practice guide. University of Gdańsk Publishing House  Górecki T., 2011, Basics of statistics with examples in R, BTC Publishing, Legionowo;</p>	
	Supplementary literature	<p>Kala R., Statistics for naturalists. Ed. AR Poznań 2002  Stanisz A., 2006, Accessible statistics course based on the STATISTICA PL program with examples from medicine (Volume I), StatSoft  Sobczyk M., 2003, Statistics. Theoretical foundations, examples - tasks, UMCS Publishing House, Lublin  Koronacki J., Mielniczuk J., 2018, Statistics for technical and natural sciences, PWN, Warsaw  Kot S., Sokółowski A., Jakubowski J., 2011, Statistics, Ed. 2, PWN, Warsaw</p>	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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