University of Gdańsk

Subject card

Subject name and code	Statistics in Geography - lecture, PG_00193790		
Field of study	Geography		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2027/2028
Education level	Bachelor'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	2	ECTS credits	2.0
Learning profile	academic	Assessment form	exam
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Mirosław Miętus	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	20.0	0.0	0.0	0.0	0.0	20

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	20	2.0	28.0	50

Subject objectives

The lectures will provide basic knowledge of the basics of descriptive statistics to a degree that will allow you to understand the content of lectures given in the further course of study, as well as to perform the calculations necessary to carry out tasks in both physical and socio-economic geography.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GEOGRL3-U04] can apply field and laboratory methods and research tools, spatial analysis methods, and methods of presenting research results in the field of geography, assess their usefulness for tasks in which the application goal of geography can be realized	is able to apply methods and research tools in the field of geographic sciences and evaluate their suitability for the implementation of tasks in which the application goal of geography can be realized curricular content: 1-4	[SU4] test/exam - oral or written
[GEOGRL3-W06] knows advanced methods of acquiring, processing, and compiling geographic environmental data, as well as methods of analyzing and interpreting such data	knows and understands to an advanced degree the methods and principles of developing data on the natural and anthropogenic environment, as well as methods of their analysis and interpretation, program content: 1 - 10	[SW4] test/exam - oral or written

Subject contents

1. Introductory Topics - Concepts 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. Measures of Dispersion, Characteristic and Probability Distributions.
4. Testing Statistical Hypotheses (Formulating Hypotheses, Significance Level, Types of Statistical Tests); Interval Estimation.
5. Linear Regression (Estimating and Interpreting Function Parameters, Assessing Goodness 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); Estimating and Interpreting Trend Function Parameters; Multiple Regression.

Prerequisites and co-requisites

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>test</td><td>51.0%</td><td>95.0%</td></tr>
<tr><td>activity during lecture</td><td>51.0%</td><td>5.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Makać W., Urbanek-Krzysztofiak D., 2004. Metody opisu statystycznego. Wyd. UG, Gdańsk.

Balicki A., Makać W., 2010, Metody wnioskowania statystycznego, Wyd. UG, Gdańsk</td></tr>
<tr><td>Supplementary literature</td><td>Krysicki w., Bartos J., Dyczka W., Królikowska K., Wasilewski M., 1986. Rachunek prawdopodobieństwa i statystyka matematyczna w zadaniach. Cz. II. Statystyka matematyczna, PWN.

Luszniewicz A., Słaby T., 1997, Statystyka stosowana, PWE, Warszawa.
Augustyniak H., 1999, Statystyka opisowa z elementami demografii, Przedsiębiorstwo Wydawnicze Ars boni et aequi, Po-znań.
Ignatczyk W., Chromińska M., 1999. Statystyka. Teoria i zastosowanie. WSB, Poznań.
Wieczorkowska G. (i in.), 2004. Statystyka. Wprowadzenie do analizy danych sondażowych i eksperymentalnych.
Wydawnictwo Naukowe Scholar, Warszawa.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">Determine the basic sample statistics.
Calculate the probability given that variable x meets the criteria for a normal distribution.
Determine the confidence interval for the sample mean given the known variance and significance level.
Determine the change in characteristic y over time given the linear trend equation.
Verify the null hypothesis of statistical significance of the correlation coefficient between two characteristics, given the alternative hypothesis of no significance.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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