University of Gdańsk

Subject card

Subject name and code	Statistical Analysis in Business Projects, PG_00119197		
Field of study	Economics		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
Education level	Bachelor's studies	Subject group	
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	2.0
Learning profile	academic	Assessment form	exam
Conducting unit	Department of Statistics -> Faculty of Management -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Olga Komorowska	
	Teachers	dr Olga Komorowska	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	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	0.0	0.0	15

Subject objectives	The student's knowledge and understanding of the issues of statistical research used in the implementation of business projects. Acquiring the ability to critically evaluate research results, understanding the strengths and weaknesses of incomplete and full research. The ability to choose the appropriate analytical method for the available data and the stated purpose of the study.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[EKONL3_U04] can predict and forecast the course of economic and social processes and phenomena	Can select appropriate data (variables) for analysis from multiple sources. Can define a research problem and formulate a hypothesis.	[SU5] implementation of a problem task
[EKONL3_K02] is aware of the level of knowledge in the field of economics and understands the need to deepen and update this knowledge throughout life	The student is able to pose a challenging question regarding a scientific article they have read.	[SK1] oral statement/conversation/ discussion
[EKONL3_U10] has the ability to prepare oral presentations, in Polish and in a foreign language, on economic and social issues, using specialist terminology, theoretical approaches, principles of collecting various sources of data, their description and interpretation, and making inferences from scientific literature, and is able to take an active part in a debate	The student is able to describe data provided by various institutions, such as the Central Statistical Office (GUS) and the Public Employment Agency (PUP).	[SU1] oral statement/conversation/ discussion
[EKONL3_K06] is willing to be guided in his professional life by business ethics and corporate social responsibility, to respect others and to be loyal to his employer	The student understands the challenges faced by institutions such as the Central Statistical Office (GUS) related to data collection. The student understands the factors that influence the quality of the final analysis results.	[SK4] test/exam - oral or written
[EKONL3_W06] have an advanced knowledge of selected methods and tools, including statistical and econometric techniques, for describing economic agents and structures as well as social institutions and the processes taking place in them	The student identifies the appropriate method for the available data. The student is familiar with various data sources and is able to interpret data provided by institutions such as the Central Statistical Office.	[SW4] test/exam - oral or written [SW5] implementation of a problem task

Subject contents

1. Chart Analysis
2. Data sources
3. Variable transformations
4. Methods of linear ordering (rank and Hellwig)
5. Normal distribution
6. Random and non-random methods of selecting sampling units
7. Random and non-random errors
8. Point and interval estimation for mean and proportion
9. Odds ratio

Prerequisites and co-requisites

Knowledge of the basics of statistics.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test	51.0%	50.0%
Research problem	51.0%	30.0%
Work in classes	51.0%	20.0%

Recommended reading	Basic literature	Kozłowski A. Szreder M., Informacje spoza próby w badaniach statystycznych. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk, 2020; strony: 9-75. Panek T., Statystyczne metody wielowymiarowej analizy porównawczej, SGH, Warszawa, 2009, strony: 13-75 Szreder M., Metody i techniki sondażowych badań opinii, PWE, Warszawa, 2010; strony: 36-146 oraz 170-201. Szreder M., Wartość poznawcza mediany i dominanty w analizie płac, Biuletyn Polskiego Towarzystwa Ekonomicznego, 1, 2023. Walesiak M., Przegląd formuł normalizacji wartości zmiennych oraz ich własności w statystycznej analizie wielowymiarowej, Przegląd Statystyczny, zeszyt 4,2014.
	Supplementary literature	Provost F. Fawcett T., Analiza danych w biznesie, Helion, 2015; Foreman J.W., Mistrz analizy danych, Helion, 2019. Larose D.T., Metody i modele eksploracji danych, PWN, 2012. Szreder M., Polemika z artykułem Mirosława Błażeja i Emilii Gosińskiej pt. Dylematy związane z estymacją dominanty wynagrodzeń, Wiadomości Statystyczne, 68, 2023.
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. What are the characteristics of a box plot? 2. Why isn't a pie chart always a good chart to show structure? 3. What is the purpose of standardizing variables? 4. What is a sampling frame? 5. What are the characteristics of a normal distribution? 6. State the disadvantages of the linear ordering method, the so-called Hellwig method. 7. What is OB decomposition?	
Work placement	Not applicable	

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