

Subject card

Subject name and code	Statistics, PG_00156821						
Field of study	Finance and Accounting						
Date of commencement of studies	October 2024		Academic year of realisation of subject			2024/2025	
Education level	Bachelor's studies		Subject group			Obligatory subject group in the field of study Subject group related to scientific research 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			7.0	
Learning profile	academic		Assessment form				
Conducting unit	Department of Statistics -> Faculty of Management -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Ewa Wycinka				
	Teachers		mgr Teresa Plenikowska-Ślusarz				
			dr hab. Ewa Wycinka				
			dr Olga Komorowska				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	30.0	0.0	0.0	90
	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	90		10.0		75.0	175
Subject objectives	The student should understand the essence of statistical methods and be proficient in statistical nomenclature. He/she should be able to use freely elementary statistical methods in solving simple problems. The student should be able to explain the purpose of the use of particular methods and to interpret the results obtained in relation to economic and social phenomena.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[FiRL3_U01] The student understands and can correctly interpret complex economic phenomena in finance and accounting, and other social sciences. The student understands and can explain the content of announcements of economic institutions, articles published in the daily press and journals in the field of finance (excluding scientific journals). The student correctly applies concepts of social sciences.	The student is able to perform statistical analysis on financial data to understand trends and patterns. Be able to correctly interpret financial reports and newspaper articles using relevant statistical concepts.	[SU2] presentation/project/paper/report [SU4] test/exam - oral or written
	[FiRL3_W05] The student has knowledge of views on economic and social structures and institutions and types of social ties and their historical evolution.	The student knows the evolution of economic and social structures and their impact on contemporary phenomena. He/she knows how different institutions influence economic processes.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report
	[FiRL3_W06] The student has advanced knowledge of methods and tools, including data acquisition and analysis techniques, appropriate to management science and quality, which allow describing economic structures and institutions and the processes within and between them.	The student knows to use tools such as Excel or SPSS for data analysis. Uses these tools to describe and analyse economic structures and processes within them.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report
	[FiRL3_U03] The student can properly analyse the causes, course and effects of specific processes and phenomena in finance and accounting, using advanced theories and relevant social sciences methods. Can identify stakeholders of processes and phenomena from the disciplines of management and quality sciences and economics and finance.	The student is able to analyse the causes, course and effects of financial and accounting processes by using statistical tools to analyse financial data. Uses statistical methods to study economic phenomena, identify how different stakeholder groups affect financial and accounting processes.	[SU2] presentation/project/paper/report [SU4] test/exam - oral or written
	[FiRL3_U02] The student can acquire data from various sources to analyze specific economic processes and phenomena related to finance. Is able to use information technologies.	The student knows how to obtain data from various sources such as financial databases, reports and articles. He uses statistical software and data analysis tools to carry out comprehensive economic analyses.	[SU2] presentation/project/paper/report [SU4] test/exam - oral or written
	[FiRL3_K06] Creativity: - thinks creatively, is able to go beyond the usual patterns, - is able to think and act in an entrepreneurial manner, - is able to adapt flexibly to the requirements of the environment.	The student works on projects that require creative thinking and an entrepreneurial approach to problem solving. He/she is able to adapt methods of analysis to changing conditions and requirements of the environment.	[SK2] presentation/project/paper/report [SK4] test/exam - oral or written
Subject contents	Concept and methods of statistics, applications of statistics, basic concepts, statistical surveys (types, stages). Presentation of data: series, tables, graphs. Analysis of distribution properties: central tendency, dispersion, asymmetry, concentration. Random variables and their distributions. Discrete random variable and continuous random variable. Properties of distributions: normal, t-Student, chi-square, F-Snedecor. Concept of random sample, sample statistic and estimator. Properties of estimators. Point and interval estimation: mean and proportion. Statistical hypothesis verification: parametric tests (for 1 and 2 means, for 1 and 2 proportions, for 2 variances), non-parametric tests: test of randomness (Stevens series), tests of equality of probability distributions (chi-square, Kolmogorov), two sample tests (chi-square, Kolmogorov-Smirnov, series, signs) Analysis of correlation: Pearson's linear correlation coefficient and testing its significance. Spearman's rank correlation coefficient and testing its significance. Association of qualitative characteristics (selected association and contingency coefficients) and the chi-square independence test. Time series analysis: essence and types of time series, graphical presentation, measures of the average level of a phenomenon in a time series, analysis of the dynamics of simple and complex phenomena (absolute growth, individual and aggregate indices, average rate)		

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	semester project	51.0%	20.0%
	colloquium 3	51.0%	10.0%
	colloquium 2	51.0%	10.0%
	colloquium 1	51.0%	10.0%
	final exam	51.0%	50.0%
Recommended reading	Basic literature	1. Makać W., Urbanek-Krzysztofak D., Metody opisu statystycznego, UG, Gdańsk, 2000 2. Balicki A, Makać W., Metody wnioskowania statystycznego, Wyd. UG, Gdańsk 2002 3. Aczel A.D., Statystyka w zarządzaniu, PWN, Warszawa, 2017	
	Supplementary literature	1. Wycinka E, Szreder M. (red.), Zastosowania metod ilościowych w ubezpieczeniach, Wyd. UG; Gdańsk 2020 2. Kot. S, Jakubowski J., Sokołowski A., Statystyka, Wyd. Difin, Warszawa 2011	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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