

**Subject card**

<b>Subject name and code</b>	Statistics, PG_00178189						
<b>Field of study</b>	Finance and Accounting						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	2	<b>ECTS credits</b>			7.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			exam		
<b>Conducting unit</b>	Department of Statistics -> Faculty of Management -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Ewa Wycinka				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	30.0	30.0	15.0	0.0	0.0	75
	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>	75		4.0		96.0	175
<b>Subject objectives</b>	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.						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>			<b>Method of verification</b>	
	[FiRL3_W05] To an advanced degree, the student knows and understands the tools and techniques for obtaining, compiling, and analyzing the data necessary to assess the financial situation of various entities in management, quality sciences, economics, and finance.		The student identifies proper statistical methods, collects statistical data, and analyzes it using methods of descriptive statistics, association, and dynamic analysis to solve specific economic problems.			[SW4] test/exam - oral or written [SW2] presentation/project/paper/report	
	[FiRL3_U04] The student is able—from the perspective of finance and accounting—to correctly select and properly apply methods and tools from the fields of management and quality sciences, economics, and finance to analyse and forecast economic processes and evaluate economic phenomena.		"The student uses methods of statistical description and inference, interprets regularities within populations and relationships between variables.			[SU2] presentation/project/paper/report [SU4] test/exam - oral or written	

Subject contents	<p>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)</p>														
Prerequisites and co-requisites	none														
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 618 788 645">Subject passing criteria</th> <th data-bbox="801 618 1139 645">Passing threshold</th> <th data-bbox="1145 618 1477 645">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 654 788 680">project</td> <td data-bbox="801 654 1139 680">51.0%</td> <td data-bbox="1145 654 1477 680">20.0%</td> </tr> <tr> <td data-bbox="456 689 788 716">colloquiums</td> <td data-bbox="801 689 1139 716">51.0%</td> <td data-bbox="1145 689 1477 716">30.0%</td> </tr> <tr> <td data-bbox="456 725 788 752">exam</td> <td data-bbox="801 725 1139 752">51.0%</td> <td data-bbox="1145 725 1477 752">50.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	project	51.0%	20.0%	colloquiums	51.0%	30.0%	exam	51.0%	50.0%		
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exam	51.0%	50.0%													
Recommended reading	<p>Basic literature</p>	<ol style="list-style-type: none"> <li>1. Makać W., Urbanek-Krzysztofak D., Metody opisu statystycznego, UG, Gdańsk, 2000</li> <li>2. Balicki A, Makać W., Metody wnioskowania statystycznego, Wyd. UG, Gdańsk 2002</li> <li>3. Aczel A.D., Statystyka w zarządzaniu, PWN, Warszawa, 2017</li> </ol>													
	<p>Supplementary literature</p>	<ol style="list-style-type: none"> <li>1. Wycinka E, Szreder M. (red.), Zastosowania metod ilościowych w ubezpieczeniach, Wyd. UG; Gdańsk 2020</li> <li>2. Kot. S, Jakubowski J., Sokołowski A., Statystyka, Wyd. Difin, Warszawa 2011</li> </ol>													
	eResources addresses														
Example issues/ example questions/ tasks being completed															
Work placement	Not applicable														

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