

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Mathematical Statistics, PG_00068618							
Field of study	Economic Analytics							
Date of commencement of studies	October 2025		Academic year of realisation of subject			2026/2027		
Education level	first-cycle 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	Part-time studies (on-line)		Mode of delivery			at the university		
Year of study	2		Language of instruction			Polish		
Semester of study	3		ECTS credits			5.0		
Learning profile	general academic profile		Assessment form			exam		
Conducting unit	Department Of Statistics And Econometrics -> Faculty Of Management And Economics -> Wydziały Politechniki Gdańskiej							ziały
Name and surname	Subject supervisor							
of lecturer (lecturers)	Teachers							
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t Seminar		SUM
of instruction	Number of study hours	16.0	0.0	16.0	0.0		0.0	32
	E-learning hours inclu	ded: 0.0				i		
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	Participation in consultation hours		Self-study		SUM
	Number of study hours	32		6.0		87.0		125
Subject objectives	Selects and uses appropriate statistical methods to analyze data, using statistical software to process and interpret the results.							
Learning outcomes	Course out	come	Subject outcome Method of verificat			ication		
	[K6_U07] uses advanced information technologies to enhance data analysis and decision-making processes.		uses statistical software to improve analysis of mass data to support decision-making processes			[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information		
	[K6_W05] possesses knowledge in integra various sources and that enable a compre- analysis of economic	advanced ting data from in methods hensive problems.	integrates data from multiple sources and, using a variety of statistical methods, obtains results usable in practical multidisciplinary applications			[SW1] Assessment of factual knowledge		
Subject contents	Population and sample. Distributions of discrete and continuous random variables. Basic statistics and their distributions. Estimators and their properties. Point estimation. Interval estimation. Testing of statistical hypotheses. Significance level and power of a test. Parametric tests for one-dimensional populations. Parametric tests for two-dimensional populations. Tests for multidimensional populations. Tests for multidimensional populations. ANOVA. ANCOVA. MANOVA. MANCOVA. MANOVA. MANCOVA. Nonparametric tests. Goodness of fit test. Normality tests. Chi-square test of independence. Randomness tests. Sign tests. The runs test.							
and co-requisites	probability theory, des	scriptive statisti						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade		
	Lecture - Final Exam	60.0%	50.0%		
	Laboratory - Tests and Quizzes	60.0%	50.0%		
Recommended reading	Basic literature Wickham, H., Grolemund, G. (2017). R for Data Science Transform, Visualize, and Model Data, O'Reilly. Ramachandran, K., Tsokos, C. P. (2020). Mathematical Applications in R, Elsevier LTD.				
	Supplementary literature	Field, Z., Miles, J. (2022). Discovering Statistics Using R. SAGE Publications Ltd.			
	eResources addresses	Adresy na platformie eNauczanie:			
Example issues/ example questions/ tasks being completed	A calculus task in probability and central limit theorems. A calculus task in point and interval estimation. Testing of parametric hypotheses. Testing of non-parametric hypotheses. Examination - theoretical issues.				
Work placement	Not applicable				

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