



Subject card

Subject name and code	STATISTICS II, PG_00061103						
Field of study	Management						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2026/2027		
Education level	second-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	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			English		
Semester of study	2	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Statistics and Econometrics -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Błażej Kochański				
	Teachers		dr Błażej Kochański				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	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	45		6.0		49.0	100
Subject objectives	Uses appropriately selected statistical methods to analyze business data, making a critical assessment of the results obtained						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U05] collaborates with others in team projects, effectively fulfilling both leadership and team member roles to achieve established goals.		interprets the obtained analysis results as part of teamwork, taking into account a broad business context		[SU2] Assessment of ability to analyse information		
[K7_W02] understands the significance and interrelationships of key components describing economic processes, drawing on in-depth knowledge aligned with major developmental trends in scientific disciplines related to the field of studies.		explains the meaning and interdependence of key components describing economic phenomena using statistical methods for their analysis		[SW1] Assessment of factual knowledge			
Subject contents	Course content – lecture <ul style="list-style-type: none"> <li>• Probability and its properties</li> <li>• Basic principles of probabilities, Bayes' theorem</li> <li>• Random variables, parameters of distributions</li> <li>• Discrete (including: binomial, Poisson) and continuous (including: uniform, normal) distributions</li> <li>• Population and sample, sample distributions and statistics, estimators</li> <li>• Confidence intervals for the mean and proportion</li> <li>• Determining the sample size</li> <li>• Testing statistical hypotheses</li> <li>• Mean and proportion tests for one and two samples</li> <li>• Chi-square test</li> <li>• Anova</li> <li>• Other tests: nonparametric tests, correlation and regression tests</li> </ul>						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Laboratory tasks	60.0%	50.0%
	Exam	60.0%	50.0%
Recommended reading	Basic literature	McClave J.T., Benson P.G., Sincich T. (2008), Statistics for Business and Economics, Pearson/Prentice Hall Aczel A. D., Sounderpandian J. (2009), Complete Business Statistics / Aczel A. D., Sounderpandian J. (2018). Statystyka w zarządzaniu. PWN.	
	Supplementary literature	Field A., Miles J., Field Z. (2012) Discovering statistics using R. Sage Publications. Holmes A., Illowsky B., Dean S. (2017) Introductory Business Statistics 2e. OpenStax.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>Poor quality batteries were installed in 1% of a certain company's mobile phones. The probability that poor quality batteries will stop working within the first month of use is 0.49. Ordinary batteries installed in other phones may stop working properly in the first month with a probability of 0.03. In a sample selected from the population of phones, the battery stopped working within the first month. What is the probability that the battery was of good quality?</p> <p>In a certain population, the average number of children in a family is 1.67 and the standard deviation of the number of children in a family is 0.32. We randomly select 47 families from this population. What is the probability that among these randomly selected families the average number of children will be less than 1.61? What is the probability that the sample mean will deviate from 1.67 by more than 0.05? Enter a value such that the probability of obtaining a sample mean higher than this value is 40%.</p> <p>ABC has recently introduced a new method of preventing defects in manufactured machines. Historically, the failure rate (the number of machines with faults detected in the first year of operation in the total number of machines produced) in the company was 8%. After introducing the new method, 16 defects were found in a sample of 250 machines. The company's analysts hypothesised that there had been a reduction in the number of defects. An appropriate test should be performed, assuming a significance level of <math>\alpha = 0.05</math>.</p> <p>A sociologist claims that in a certain population the distribution of people according to education is as follows: higher education - 16.2%, secondary education - 47.2%, primary education - 22.6%, vocational education - 14%. A sample of 180 people was taken from this population. It was found that 28 of them had higher education, 71 - secondary education, 49 - primary education, 32 - vocational education. Can the sociologist's claim be rejected at the significance level <math>\alpha = 0.1</math>?</p>		
Practical activities within the subject	Not applicable		

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