GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	STATISTICS II, PG_00061103		
Field of study	Management		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
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		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Błażej Kochański	
	Teachers	dr Błażej Kochański	
		dr Olgun Aydin	

Lesson types and methods of instruction	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] cooperates with other people in the implementation of teamwork, both as a leader and a team member, effectively achieving the assumed 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] explains the meaning and interdependence of the key components describing economic processes, using in-depth knowledge consistent with the main trends in the development of scientific disciplines related to the field of study	explains the meaning and interdependence of key components describing economic phenomena using statistical methods for their analysis	[SW1] Assessment of factual knowledge

Subject contents	• Probability and its properties
	• Basic principles of probabilities, Bayes' theorem
	• Random variables, parameters of distributions
	• Discrete (including: binomial, Poisson) and continuous (including: uniform, normal) distributions
	• Population and sample, sample distributions and statistics, estimators
	• Confidence intervals for the mean and proportion
	• Determining the sample size
	• Testing statistical hypotheses
	• Mean and proportion tests for one and two samples
	• Chi-square test
	• Anova
	• Other tests: nonparametric tests, correlation and regression tests

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. (1989), Complete Business Statistics, Irwin
	Supplementary literature	Newbold P., Carlson W.L., Thorne B.M., Statistics for Business and Economics, Pearson Miller I., Miller M., John E. Freund's mathematical statistics with applications, Pearson/Prentice Hall Wackerly D., Mendenhall W., Scheaffer R.L., Mathematical statistics with applications, Thomson Brooks/Cole
	eResources addresses	Uzupełniające Adresy na platformie eNauczanie: Statistics II 2025 - Moodle ID: 43114 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=43114

Example issues/ example questions/ tasks being completed	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? 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%. 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 = 0.05. 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 = 0.1?
Work placement	Not applicable

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