

Subject card

Subject name and code	Descriptive Statistics, PG_00153253						
Field of study	Mathematical Modeling and Data Analysis						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group 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	1		ECTS credits		4.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Division of Set Theory -> Institute of Mathematics -> Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Filip Strobin				
	Teachers						
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		5.0		50.0	100
Subject objectives	To familiarise the student with the basic concepts of descriptive statistics and its practical application using a computer programme for statistical data analysis.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[MMiADL3_K10] is ready to analyse data and communicate the conclusions of such analysis in an accessible form		is prepared to analyze data from the perspective of statistics and present the resulting conclusions in an accessible and understandable way		[SK2] presentation/project/paper/report [SK8] observation of student's independent or team work		
	[MMiADL3_U13] knows how to use computer programmes in the field of data analysis		is able to use computer programs within the scope of subject content		[SU2] presentation/project/paper/report [SU5] implementation of a problem task		
	[MMiADL3_W09] knows and understands the basics of computational and programming techniques supporting mathematician's work and understands their limitations		has knowledge of the basics of computational and programming techniques supporting the work of a mathematician and is aware of and understands their limitations		[SW2] presentation/project/paper/report [SW5] implementation of a problem task		
	[MMiADL3_U09] is able to use the learned software package or the learned programming language to solve selected problems from the known fields, in particular from mathematical analysis, linear algebra and statistics		Is able to use a selected software package or programming language to solve problems in statistics		[SU2] presentation/project/paper/report		

Subject contents	1. Computer programmes used in statistical data analysis. 2. Preparation of data for statistical analysis. 3. Empirical distribution of a random sample (e.g. empirical distribution and frequency and histogram). 4. Tabular and graphical presentation of statistical data. 5. Classical measures of central tendency and variation (e.g. mean and variance of a random sample). 6. Positional measures of central tendency and variation (e.g. median and quartiles of a random sample). 7. Measures of asymmetry and measures of flattening of a random sample distribution. 8. Methods of analysing the dynamics of phenomena (time series, index methods, absolute and relative growth, individual dynamic indices, chronological average).		
Prerequisites and co-requisites	no requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	observation of the student's attitude	100.0%	0.0%
	completion of the credit work	51.0%	40.0%
	implementation of projects	51.0%	60.0%
Recommended reading	Basic literature	A. Literature required for final course credit:A.1. used during the class 1. J. Wierzbiński, Statystyka opisowa, Wydawnictwo WZ, Warszawa 2006. 2. P. Biecek, Przewodnik po pakiecie R, Wrocław : Oficyna Wydawnicza GIS, cop. 2008. 3. W. Kryszicki, J. Bartos, W. Dyczka, K. Królikowska, M. Wasilewski, Rachunek prawdopodobieństwa i statystyka matematyczna w zadaniach. Część 2, PWN, 2007. A.2. Studied independently by the student 1. A.D. Aczel; Statistics in management; PWN, Warsaw 2000 . 2. J. Verzani, Using R for Introductory Statistics, Boca Raton [etc.] : Chapman & Hall/CRC, [post 2007], cop. 2005. 3. H.Wicham, ggplot2, Elegant graphics for data analysis, Springer.	
	Supplementary literature	B. Complementary literature: 1. S. Ostasiewicz, Z.Rusnak, U. Siedlecka, Statistics; Wydawnictwo AE; Wrocław 1995. 2. Wieczorkowska. G. Wierzbiński, J. Statystyka: analiza badań społecznych. Wydawnictwo Naukowe SCHOLAR, Warszawa 2007. 3. W. Makić, D. Urbanek-Krzysztofiak, Methods of statistical description, Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego, 1995.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	no applicable		
Work placement	Not applicable		

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