GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Descriptive statistics, PG_00045293		
Field of study	Data Engineering		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
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	Full-time studies	Mode of delivery	blended-learning
Year of study	1	Language of instruction	English
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Katedra Statystyki i Ekonometrii -> Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Karol Flisikowski	
	Teachers	dr inż. Karol Flisikowski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	0.0	0.0	30

E-learning hours included: 18.0

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	30	4.0	41.0	75

Subject objectives

The main aim of the course is to acknowledge students with the statistical analysis based on the sample data using R & R-studio and comparison with solutions using Python.

Learning outcomes

Course outcome	Subject outcome	Method of verification

Subject contents	Part 1. Introduction to R & R-studio. 1. Types of data, basic programming skills (R) 2. Types of statistical variables, basic operations, graphs 3. Methods of raw data aggregating Part 2. Describing univariate data 4. Measures of central tendency, dispersion, assymetry (skewness) and kurtosis, inequality & concentration + aggregating data (in respect to the type of variable) + graphs Part 3. Describing bivariate data 5. Correlation analysis for pair of quantitative variables + graphs 6. Rank correlation 7. Two-way tables, correlation analysis of qualitative variables + graphs Part 4. Regression analysis 8. OLS. Simple regression, multiple linear regression. 9. Nonlinear regression. 10. Regression analysis for qualitative dependend variable (optional)*. Part 5. Time series 11. Describing time series graphs, tables, dynamics & indices. 12. Decompositions. Time series models (MA, AR, ARMA).
Prerequisites and co-requisites	Mathematics, English (intermediate level), basic programming skills.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Laboratory - final test and projects	60.0%	50.0%
Lecture (final exam)	60.0%	50.0%

Recommended reading

Basic literature	1. Statistics (The easier way) with R, Nicole M. Radziwill, 2016. 2. Discovering statistics using R, Andy Field, Jeremy Miles, Zoe Field, Sage, 2012.
Supplementary literature	1. Statistics for Business and Economics, McClave Benson Sincich, Pearson, 2008. 2. Using R for Introductory Statistics, John Verzani, Chapman and Hall, 2000.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	1. How can we recognize which model of time series decomposition we analyze - additive or multiplicative? Give one example for each of them. 2. Sketch the bimodal distribution of the discrete variable. 3. How can we deal with a large number of missing cases? List three methods.
Work placement	Not applicable

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