University of Gdańsk

Subject card

Subject name and code	Analytical Software and Data Visualization, PG_00203654						
Field of study	Informatics and Econometrics						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	part-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		7.0		
Learning profile	academic		Assessment form		exam		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		mgr Tomasz Jastrzębski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	8.0	16.0	16.0	0.0	0.0	40
	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	40		2.0		133.0	175
Subject objectives	Familiarization with IT tools for statistical and econometric analysis and data presentation. Acquiring the skills to independently develop software for data analysis, visualization, and computer simulation.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[IiEL3_U03] Can obtain data from appropriately selected sources, use these data to solve economic and social problems, and process and interpret them using econometrics, informatics or statistics tools	The student is able to use various data sources and apply adequate methods of data acquisition and processing using appropriate IT, statistical or econometric tools in order to perform socio-economic analyses.	[SU2] presentation/project/paper/ report
[IiEL3_W05] Knows and understands the methods, techniques and informatics or statistics tools used to acquire, collect, process and present data in decision-making processes	The student knows and is able to select appropriate IT or statistical tools enabling the acquisition, collection, processing and visualization of data reflecting the functioning of phenomena and processes occurring in the socio-economic environment.	[SW2] presentation/project/paper/ report
[IiEL3_U02] Can select or construct econometrics, informatics or statistics tools and apply them to describe and solve economic and social problems	The student is able to select or construct econometric, IT, or statistical tools enabling the acquisition, processing, and analysis of data reflecting the functioning of phenomena and processes occurring in the socioeconomic environment.	[SU2] presentation/project/paper/ report
[IiEL3_W06] Knows and understands, to an advanced degree, the processes and methods of creating, developing, and providing appropriate conditions for using informatics or statistics tools, particularly those that improve human and organizational functioning	The student knows and is able to select appropriate IT tools (taking into account their limitations) enabling the acquisition, processing and analysis of data reflecting the functioning of the organization and the processes taking place in its environment.	[SW2] presentation/project/paper/ report

Subject contents

Excel

- Statistical functions built into Excel, their applications, and limitations;
- Methods for calculating characteristics not included in Excel;
- Performing statistical analyses in Excel for statistical data analysis;
- Using the Data Analysis tool in statistical analysis;
- Downloading/exporting data (.csv)
- Organizing data (variable formats);
- Creating charts.

Statistica

- General information about the program;
- Program windows: data editor, report, and command windows;
- Working with a sample data set;
- Defining variables and values;
- Downloading data from external files;
- Statistical analysis;
- Transforming variables;
- Weighing data;
- Filtering a data set;
- Subset analysis;
- Data validation;
- Creating and editing charts;
- Work automation (single analysis macros, global macros).

Prerequisites and co-requisites

Knowledge of descriptive statistics tools and mathematical statistics.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Project 1 (Excel)	51.0%	50.0%
Project 2 (Statistica)	51.0%	50.0%

Recommended reading

Basic literature	1. K. Grzeszkiewicz-Radulska, J. Wiktorowicz, M.M. Grzelak, Analiza statystyczna z IBM SPSS Statistics, Wydawnictwo UŁ, Łódź 2020, https://wydawnictwo.uni.lodz.pl/wp-content/uploads/2021/01/Wiktorowicz-i-in._Analiza-statystyczna-.pdf 2. M. Rabiej, Analizy statystyczne z programami Statistica i Excel, Helion, Gliwice, 2018
Supplementary literature	None.
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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