GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Visualization of economic data, PG_00053007		
Field of study	Data Engineering, Data Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
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	at the university
Year of study	3	Language of instruction	English
Semester of study	5	ECTS credits	3.0
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 Olgun Aydin	
	Teachers	dr Olgun Aydin	

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	2.0	28.0	75

Subject objectives

The aim of the course is to acquire the skills needed to construct effective communication in the visual business communication with the help of IT tools and solutions.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U02] prepares and presents convincingly professional presentations of the results of undertaken activities, with their advanced interpretation	The student prepares and presents convincing professional visual analyses.	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools
[K6_W03] identifies veracious sources of information relevant to the analyzed issues	The student identifies reliable sources of visual information and uses appropriate data visualization methods for effective business communication.	[SW2] Assessment of knowledge contained in presentation

Subject contents	Course content – lecture History of statistical graphic Visualization of information in business and engineering communications. The role of visual information in the decision-making process Ergonomics of visual communication. Perceptual characteristics of the users. Perceptual and cognitive limitations of the user Basic forms of presentation of visual information: diagrams, charts, diagrams Visualization of quantitative data Visualization of qualitative data Exploration of statistical interactions Exploration of time series Cluster analysis (Wards method, k-means method) Fundamentals of GIS Analysis and visualization of geospatial data Visualization of symbolic data Course content – laboratory Visualization of information in business and engineering communications. Basic forms of presentation of visual information: diagrams, charts, diagrams Visualization of quantitative data Analysis and visualization of geospatial data
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written coloqium	60.0%	50.0%
laboratory exercises	60.0%	50.0%

Recommended reading	Basic literature	McClain, Bonny P. Python for geospatial data analysis: theory, tools, and practice for location intelligence. " O'Reilly Media, Inc.", 2022. Wilke, Claus O. Fundamentals of data visualization: a primer on making informative and compelling figures. O'Reilly Media, 2019. Schwabish, Jonathan. Better data visualizations: A guide for scholars, researchers, and wonks. Columbia University Press, 2021.

	Supplementary literature	Healy, Kieran. Data visualization: a practical introduction. Princeton University Press, 2024. Navlani, Avinash, Armando Fandango, and Ivan Idris. Python Data Analysis: Perform data collection, data processing, wrangling, visualization, and model building using Python. Packt Publishing Ltd, 2021. Embarak, Dr Ossama, Karkal Embarak, and Karkal. Data analysis and visualization using python. Berkeley, CA, USA: Apress, 2018.
	eResources addresses	
Example issues/ example questions/ tasks being completed	- developing the presentation of data related to a selected phenomenon - evaluation of usability and clarity of the visual transmission - principles of the data presentation for business analytics	
Practical activites within the subject	Not applicable	

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