GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Visualization of economic data, PG_00053007		
Field of study	Data Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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	Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Marta Kuc-Czarnecka	
	Teachers	dr Marta Kuc-Czarnecka	

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	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_W12] Knows the methods and tools for acquiring, collecting and processing data, in order to make business decisions using information systems and engineering technologies	The student has an extended knowledge of obtaining, processing and visualization methods of economic information and various forms of its presentation.	[SW1] Assessment of factual knowledge
	[K6_U06] Independently solves complex engineering tasks using literature, materials and devices, prepares extensive documentation of the developed solution using appropriate description techniques.	Student has the ability to use various methods and tools for visualization of economic information	[SU1] Assessment of task fulfilment
	[K6_K01] is aware of quickly changing trends and the resulting need for further education and self-improvement in the area of the performed profession of an engineer with IT and economic-financial skills.	Student understands the need to keep up with the development of technology for information presentation and visualization	[SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice

Subject contents	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

Prerequisites and co-requisites	

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

Recommended reading	Basic literature	Biecek P. Odkrywac! Ujawniać! Objaśniać! Zbiór esejów o sztuce pokazywania danych, 2014.
		Tufte E.R., The visual display of quantitative information, 2001
		Wilkinson L., The Grammar of Graphics", 2005.
	Supplementary literature	Clarke K.C., Getting started with geographic Information Systems, 2001.
		Murray S.: Interaktywna wizualizacja danych. Wyd. Helion Warszawa 2013.
		Tufte E.: Envisioning Information. Graphic Press, Cheshire, CY, USA, 1996.
	eResources addresses	Adresy na platformie eNauczanie:

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

Work placement	Not applicable

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