

Subject card

Subject name and code	Data Visualization Platforms, PG_00177457						
Field of study	Informatics and Econometrics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Master'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	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		English		
Semester of study	2		ECTS credits		6.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Department of Business Informatics -> Faculty of Management -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Dorota Buchnowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	45.0	0.0	0.0	60
	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	60		4.0		86.0	150
Subject objectives	Familiarizing students with: - the market and functionality of data analysis and visualization applications, - forms and principles of data visualization, - practical possibilities of using data analysis and visualization tools (e.g. Tableau, Power BI, Qlick) in business data analysis.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[liEMU2_U02] Students can use conventional or innovative statistics, econometrics or informatics tools to analyze economic and social phenomena.	The student is able to create and share interactive, dynamic analytical reports using self-service BI tools. The student is able to integrate data from various sources and create calculated fields (measures, dimensions, parameters) for the purpose of building advanced analyses.	[SU2] presentation/project/paper/report [SU8] observation of student's independent or team work
	[liEMU2_W08] The student possesses a comprehensive understanding of the methods, conditions, directions, and dilemmas involved in applying advanced econometrics, informatics or statistics tools in response to dynamic environmental changes.	The student understands the need to use data analysis and visualization tools in the context of dynamic environmental changes. The student provides examples of tools for data analysis and visualization, can explain the differences between them, and express an opinion on their use. The student identifies and describes the functionalities of tools for data analysis and visualization. The student understands the goals of data visualization and selects appropriate forms accordingly, as well as describes their applications.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report
	[liEMU2_U12] The student can adapt, design, create, and operate IT systems that support business entities.	The student is able to create interactive reports (a set of dashboards) personalized to user needs, based on advanced forms of data visualization, and share them with users.	[SU2] presentation/project/paper/report [SU8] observation of student's independent or team work
Subject contents	Lecture (15h) 1. The importance of visualization in the data analysis process. 2. Principles of business data visualization. Data storytelling. 3. Business analytics maturity model. 4. Classification of advanced data analysis tools. 5. Augmented analytics. 6. Cognitive application development platforms (e.g. IBM Watson, AWS) 7. Performance Management application of analytics in business applications (CRM, ERP). 8. Directions of development of data analysis and visualization platforms. Exercises (45h) Practical tasks performed using data visualization platforms: 1. Data acquisition from various sources. 2. Data cleaning. 3. Combining data sources relationship, join, blending. 4. Creating measures and dimensions. 5. Creating interactive visualizations using filters, parameters. 6. Creating personalized forms of data visualization. 7. Creating interactive dashboards. 8. Creating and publishing business reports.		
Prerequisites and co-requisites	Knowledge of the types of data and information collected in management information.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	knowledge test	51.0%	20.0%
	tasks performed during classes	71.0%	40.0%
	final project	51.0%	40.0%
Recommended reading	Basic literature	1. Materials posted on the Educational Portal 2. Paradowski M., Wizualizacja danych dużo więcej, niż prezentacja, Materiały konferencji Wizualizacja wiedzy, Lublin 2011. 3. Buchnowska D., Systemy CRM i analityka biznesowa, [w:] Wrycza S., Maślankowski J. (red.), Informatyka ekonomiczna. Teoria i zastosowania, Wydanie II, PWN, Warszawa 2019 (rozdział 18)	

	Supplementary literature	1. GUS, Graficzna prezentacja danych statystycznych, Warszawa 2014, 2. Biecek P., Odkrywać! Ujawniać! Objasniać! Zbiór esejów o sztuce prezentowania danych, Fundacja Naukowa SmarterPoland.pl Warszawa 2012
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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