

Subject card

Subject name and code	Data Visualization Platforms, PG_00178721						
Field of study	Informatics and Econometrics						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2026/2027		
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	part-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
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	8.0	0.0	24.0	0.0	0.0	32
	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	32		2.0		116.0	150
Subject objectives	Familiarizing students with: <ul style="list-style-type: none"> 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_U03] The student is able to obtain and verify data from properly selected sources and to collect, process, and visualize it using modern econometrics, informatics or statistics tools.	The student is able to acquire and import data into self-service BI systems, manage data quality, appropriately combine datasets, create calculated fields, and build interactive and advanced visualizations tailored to data analysis objectives.	[SU2] presentation/project/paper/report [SU8] observation of student's independent or team work
	[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
	[liEMU2_W05] The student possesses advanced knowledge and understanding of informatics, statistics, and econometrics techniques and tools used to acquire, process, or visualise data to aid in decision-making and verify research hypotheses.	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
Subject contents	<p>Lecture (15h)</p> <ol style="list-style-type: none"> 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. <p>Exercises (45h)</p> <p>Practical tasks performed using data visualization platforms:</p> <ol style="list-style-type: none"> 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%
	final project	51.0%	40.0%
	tasks performed during classes	51.0%	40.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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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