University of Gdańsk

Subject card

Subject name and code	Data Visualization Platforms, PG_00177504						
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	full-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, prof. UG				
	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
[IiEMU2_U12] Can adapt, design, create, and operate IT systems that support business entities	The student is able to build interactive reports and tailored dashboards customized to user needs, utilizing advanced data visualization techniques, and effectively share them with users.	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
[IiEMU2_U03] 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
[IiEMU2_W05] 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 knows advanced data analysis and visualization tools and understands the differences between them. The student knows and understands the advanced functionalities of data analysis and visualization tools. The student knows the principles of selecting and formatting visualizations for data analysis and reporting purposes. The student knows the principles of designing and formatting business reports.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report

Subject contents	Lectures (15h) 1. The importance of visualization in the data analysis process. 2. The data visualization platforms market. 3. Core principles and advanced features of Tableau. 4. Core principles and advanced features of Power BI. 5. Principles of data visualization selection and formatting. 6. Principles of dashboard and report design and formatting. 7. Utilizing AI models in report design. 8. Development trends in data analysis and visualization platforms. Laboratory Classes (45h) 1. Working with Tableau: • Data importing and connecting data sources (relationships, joins, blending); • Data preparation – transformation and creating calculated fields; • Building tailored data visualizations; • Designing dashboards; • Utilizing basic action types – highlighting, filtering, and navigation; • Utilizing various types of parameters and parameter actions; • Utilizing sets and set actions. 2. Working with Power BI: • Acquiring data from various sources; • Data transformation in Power Query; • Creating data models; • Utilizing DAX (Data Analysis Expressions) for creating columns, measures, and tables; • Creating and customizing data visualizations; • Publishing reports and creating apps;

<table>
<tr><td></td><td>• Designing interactive report pages;
• Generating insights and automated reports.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Knowledge of the types of data and information collected in management information.</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>tasks performed during classes</td><td>51.0%</td><td>40.0%</td></tr>
<tr><td>knowledge test</td><td>51.0%</td><td>20.0%</td></tr>
<tr><td>final project</td><td>51.0%</td><td>40.0%</td></tr>
</table>
</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>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)</td></tr>
<tr><td>Supplementary literature</td><td>1. GUS, Graficzna prezentacja danych statystycznych, Warszawa 2014,
2. Biecek P., Odkrywać! Ujawniać! Objaśniać! Zbiór esejów o sztuce prezentowania danych, Fundacja Naukowa SmarterPoland.pl Warszawa 2012</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table>
</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>

Document generated electronically. Does not require a seal or signature.