

Subject card

Subject name and code	Methods of Business Intelligence and Data Visualization, PG_00169845						
Field of study	Economics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group		
Mode of study	part-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		2.0		
Learning profile	academic		Assessment form				
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Stanisław Umiński				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	10.0	0.0	0.0	0.0	10
	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	10		3.0		37.0	50
Subject objectives	As part of the course students will learn basic methods of data transformation in order to use them in making tactical and strategic decisions in business processes . BI tools concern the methods of acquiring , integrating and analyzing data sets and their effective presentation in the form of tables , maps , graphics , charts and advanced reports . Effective data analysis allows you to optimize decision-making processes and improve the competitive position of the organization .						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[EKONL3_K06] is willing to be guided in his professional life by business ethics and corporate social responsibility, to respect others and to be loyal to his employer	The student will be able to independently supplement and improve the acquired knowledge and BI skills	[SK2] presentation/project/paper/report
	[EKONL3_U07] is able to participate in analyses and evaluations of alternative solutions to economic and social problems and to choose the methods and instruments to resolve them rationally	The student is able to present the results of analyses in a competent and transparent manner in the form of reports	[SU2] presentation/project/paper/report
	[EKONL3_U06] uses the knowledge acquired in economics, finance and management to solve economic and social dilemmas arising in the professional context	The student is able to present the results of analyses in a competent and transparent manner in the form of reports	[SU2] presentation/project/paper/report
	[EKONL3_U01] can correctly interpret economic and social phenomena and apply knowledge of economics, finance and management sciences to explain economic phenomena	The student acquires the ability to independently use database and data visualization applications	[SU2] presentation/project/paper/report
	[EKONL3_W08] has knowledge of the processes of changing elements, enterprises and whole structures of economic organisations, as well as the processes of changing social institutions, knows what their causes, course, scale, consequences are and what the influence of external stakeholders is on them	The student will gain knowledge about the transformation processes of business entities that are participants in global processes	[SW2] presentation/project/paper/report
	[EKONL3_W01] has advanced knowledge of the nature of social sciences, their place in the system of sciences, knows the role of economic sciences in this system and uses universal economic terminology	The student will learn the basics of BI and data visualization. The most important concepts and concepts concerning the subject will be presented and explained. The student learns the importance of BI and data visualization for the functioning of a business organization in a volatile, open and competitive economic environment. The student defines the planes of translating data analysis into tactical and strategic decisions	[SW2] presentation/project/paper/report
	[EKONL3_U10] has the ability to prepare oral presentations, in Polish and in a foreign language, on economic and social issues, using specialist terminology, theoretical approaches, principles of collecting various sources of data, their description and interpretation, and making inferences from scientific literature, and is able to take an active part in a debate	The student improves the ability to prepare oral presentations, taking into account the conditions of the global economy	[SU2] presentation/project/paper/report
	[EKONL3_K01] recognises the importance of economic knowledge in identifying and solving economic problems and of consulting experts when difficulties in solving them independently	The student will understand that due to the volatility of the economy, lifelong learning is necessary. Based on the acquired knowledge, he will be able to inspire others to learn	[SK2] presentation/project/paper/report

Subject contents	1. Introduction to databases (data acquisition, database integration, relationships in databases, retrieving data from databases, queries) 2. Introduction to PowerBI 3. Basic BI tools (pivot tables, mapping, visualization methods) 4. Basic functions of DAX 5. Variables, VAR submission 6. Create interactive reports using MS Office tools Students' doubts or interpretation problems will also be solved during consultations.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		50.0%	100.0%
Recommended reading	Basic literature	1. Russo M., Ferrari A., (2019) Kompletny przewodnik po DAX. Analiza biznesowa przy użyciu Microsoft Power BI, SQL Server Analysis Services i Excel, wyd. 2, APN Promise, Warszawa 2. Russo M., Ferrari A., (2020) DAX Patterns, 2nd edition, SQLBI Corp, Las Vegas, USA 3. Michael A., Wehrbe B., Decker J., (2019) <i>Analizy Business Intelligence. Zaawansowane wykorzystywanie Excela</i> , Helion, ISBN 978-83-283-5808-9 4. Kirk A., (2019) Data Visualisation. A Handbook for Data Driven Design, 2nd edition, Sage Publications, Los Angeles 5. O. Wilke C., (2019) Fundamentals of Data Visualization: A Primer on Making Informative and Compelling Figures, O'Reilly, Beijing, Boston	
	Supplementary literature	ABSL (2024) Sektor nowoczesnych usług biznesowych w Polsce 2024, Warszawa (współautorzy raportu T. Brodzicki, S. Umiński) ABSL (2023) Strategic Foresight in the Business Services Sector 2023, Warszawa (współautorzy raportu T. Brodzicki, S. Umiński)	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	PowerBI Configuration Basics Creating relationships in databases Create calendars in DAX Sales visualization , seasonality , structure Create charts in Power BI		

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