

Subject card

Subject name and code	Fundamentals of Business Intelligence, PG_00178701						
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 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	1	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 Jacek Maślankowski				
	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	<ol style="list-style-type: none"> Familiarizing students with a comprehensive approach to designing data warehouses and Business Intelligence systems. Preparing students to write scripts that manage data collected in Business Intelligence systems. 						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[liEMU2_U12] The student can adapt, design, create, and operate IT systems that support business entities.	Designs tabular, graphical and map reports based on database queries, creates queries for reporting systems – in SQL and MDX languages, manages the reporting server and automates the processes occurring in them.			[SU2] presentation/project/paper/report		
	[liEMU2_W09] The student possesses a comprehensive understanding of both traditional and modern entrepreneurship principles.	Critically evaluates reports used in Business Intelligence.			[SW4] test/exam - oral or written		
	[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.	Finds appropriate data sources to solve a specific problem and critically evaluates the quality of that data.			[SU2] presentation/project/paper/report		
	[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.	Understands the purpose of creating and using Business Intelligence systems and the mathematical, statistical and econometric methods used in them, e.g. data mining models.			[SW4] test/exam - oral or written		

Subject contents	<p>Lecture Introduction to data warehouses and decision support systems. Data warehouse architecture. Data mining methods and OLAP systems. Data warehouse modeling data integration. Data warehouse implementation methodologies. Business Intelligence systems. Creating data models. Example of building a model. Data warehouse management. Exercises Creating an operational database: advanced forms of select statements, transferring data sets. Implementing a multidimensional model: creating multidimensional tables, layering dimensions. Transferring data to a multidimensional model: designing the ETL process. Analytical and reporting tools: MS Reporting Services creating multidimensional reports and analyses. The essence of reporting services SQL Server Reporting Services, PowerBI, Apache SuperSet, implementation scenarios, installation Preparing reports planning the report project, downloading data, designing the layout, interactions and functions Data visualization charts, gauges, indicators, maps. RDL (Report Definition Language) XML tag syntax and description. Report server security and administration,</p>											
Prerequisites and co-requisites	None											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 624 794 651">Subject passing criteria</th> <th data-bbox="799 624 1137 651">Passing threshold</th> <th data-bbox="1142 624 1481 651">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 658 794 685">Exam - test</td> <td data-bbox="799 658 1137 685">51.0%</td> <td data-bbox="1142 658 1481 685">50.0%</td> </tr> <tr> <td data-bbox="456 692 794 719">Project</td> <td data-bbox="799 692 1137 719">51.0%</td> <td data-bbox="1142 692 1481 719">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Exam - test	51.0%	50.0%	Project	51.0%	50.0%
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Project	51.0%	50.0%										
Recommended reading	Basic literature	<p>Wrycza S., Maślankowski J. (red.), Informatyka ekonomiczna. Teoria i zastosowania., PWN, 2019 - rozdział 19. Systemy Business Intelligence; rozdział 15. Bazy Danych. Big Data.</p> <p>Kimball R., Ross M., The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling, John Wiley & Sons, 2013</p> <p>Misner S., Microsoft SQL Server 2012 Reporting Services, Tomy 1 i 2, APN Promise 2013</p> <p>Documentation: MS SQL Server Analysis Services and Reporting Services</p>										
	Supplementary literature	<p>Januszewski A., Funkcjonalność informatycznych systemów zarządzania. T. 2. Systemy Business Intelligence, PWN 2013</p> <p>Inmon W., Building the Data Warehouse. Fourth edition., John Wiley & Sons, New York 2005</p> <p>Collier K.W., Agile Analytics: A Value-Driven Approach to Business Intelligence and Data Warehousing, Addison Wesley, 2012</p>										
	eResources addresses											
Example issues/ example questions/ tasks being completed	<p>Knowledge of Data Warehouse Models Building Business Intelligence Systems</p>											
Work placement	Not applicable											

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