

Subject card

Subject name and code	Data Mining, PG_00170201						
Field of study	International Economic Relations						
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	
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			1.0	
Learning profile	academic		Assessment form				
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Tomasz Czuba				
	Teachers		dr Tomasz Czuba				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	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	15		10.0		0.0	25
Subject objectives	To learn how to analyse data using different statistical methods. To search statistical methods for their verification.						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[MSGMU2_K03] is ready to actively participate in groups, organisations and institutions conducting professional projects concerning the functioning of economic entities in the conditions of globalisation and the development of integration processes		Students will learn to prepare speeches and oral presentations in Polish and English on selected topics.			[SK2] presentation/project/paper/report [SK5] implementation of a problem task	
	[MSGMU2_W13] knows and understands methods and tools for describing economic phenomena, including data acquisition techniques, which make it possible to describe and analyse economic entities functioning on the international market as well as processes and phenomena occurring in them and between them, and also those supporting decision-making processes		The student is able to use basic computer programmes in the acquisition and analysis of data necessary for professional work.			[SW2] presentation/project/paper/report [SW5] implementation of a problem task	

Subject contents	1 Data mining as an analytical process Types of data resources, availability of data, methods of dabble aggregation, ways of combining data, programs used in the data mining process. 2-3 Data mining process - Exploration Data preparation. Data cleaning and transformation, selection of subsets of records preliminary selection of variables (features). Reducing the number of analyzed variables to a level that allows the analysis to be performed efficiently. 4-5 Data mining process - Implementation and application of models. Applying for new data the models obtained and considered best. Obtaining predicted values or classifications . 6-7 Group presentations Presentations presented and discussed during classes and consultations with the lecturer.								
Prerequisites and co-requisites									
Assessment methods and criteria	<table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Group presentations of data mining projects</td><td>51.0%</td><td>100.0%</td></tr></table>	Subject passing criteria	Passing threshold	Percentage of the final grade	Group presentations of data mining projects	51.0%	100.0%		
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Recommended reading	<table><tr><td>Basic literature</td><td>1. M. Lasek, Metody Data Mining w analizowaniu i prognozowaniu kondycji ekonomicznej przedsiębiorstw, Difin 2007. 2. D. Larose, Metody i modele eksploracji danych, PWN 2008 3. original studies by T. Czuba (distributed during classes) 4. own databases</td></tr><tr><td>Supplementary literature</td><td>T. Hastie, R. Tibshirani, J. H. Friedman, <i>The elements of statistical learning: Data mining, inference, and prediction</i>. New York: Springer 2001.</td></tr><tr><td>eResources addresses</td><td></td></tr></table>	Basic literature	1. M. Lasek, Metody Data Mining w analizowaniu i prognozowaniu kondycji ekonomicznej przedsiębiorstw, Difin 2007. 2. D. Larose, Metody i modele eksploracji danych, PWN 2008 3. original studies by T. Czuba (distributed during classes) 4. own databases	Supplementary literature	T. Hastie, R. Tibshirani, J. H. Friedman, <i>The elements of statistical learning: Data mining, inference, and prediction</i> . New York: Springer 2001.	eResources addresses			
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Example issues/ example questions/ tasks being completed	1. Analysis of the structure of databases 2 Types of databases 3 Statistical methods in database analysis								
Work placement	Not applicable								

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