

Subject card

Subject name and code	Data mining, PG_00119612						
Field of study	Economics						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2024/2025		
Education level	Master's studies	Subject group			Obligatory subject group in the field of study Specialty subject group		
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish The classes are workshop-based.		
Semester of study	2	ECTS credits			1.0		
Learning profile	academic	Assessment form			credit		
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		0.0		0.0	15
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		
	[EKONMU2_U08] can independently analyse economic and social phenomena and processes, and can perform a theoretically deepened assessment of such phenomena, using appropriately selected research method		The student is able to use basic computer programmes in the acquisition and analysis of data necessary for professional work.		[SU2] presentation/project/paper/report [SU6] demonstration of practical skills		
	[EKONMU2_W06] knows in advanced stage statistical and econometric methods and tools for description and macro- and microeconomic modelling of economic structures and public institutions and processes occurring in them		Students will learn to prepare speeches and oral presentations in Polish and English on selected topics.		[SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW5] implementation of a problem task		
	[EKONMU2_K05] correctly identifies, diagnoses and solves dilemmas and alternative solutions related to the profession		Students will be able to correctly interpret economic phenomena, correctly analyse the causes and course of economic processes.		[SK2] presentation/project/paper/report [SK5] implementation of a problem task		

Subject contents	<p>1-2 Data mining as an analytical process Types of data resources, availability of data, methods of data aggregation, ways of combining data, programs used in the data mining process.</p> <p>3-6 The data mining process - Exploration. Data preparation. Data cleaning and transformation, selection of subsets of records pre-selection of variables (features). Reducing the number of analysed variables to a level that allows to perform the analysis efficiently.</p> <p>7-10 Data mining process - Model building and evaluation. Consideration of a variety of models, selection of the best one. Model evaluation criterion - quality of prediction (i.e. correctness of determining the value of the modelled variable and stability of results for different samples).</p> <p>11-14 Data mining process - Implementation and application of models. Applying for new data the models obtained and considered best. Deriving predicted values or classifications.</p> <p>15. Group presentations</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Group presentations of data mining projects	100.0%	100.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> 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		
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 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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