



Subject card

Subject name and code	Data Mining , PG_00049188						
Field of study	Economic Analytics						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2022/2023		
Education level	second-cycle 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			4.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Informatics in Management -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Nina Rizun				
	Teachers		dr Nina Rizun				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	8.0	0.0	8.0	0.0	0.0	16
	E-learning hours included: 0.0						
DATA MINING NSTAC 2022 - Moodle ID: 26959 https://enauzanie.pg.edu.pl/moodle/course/view.php?id=26959							
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	16		9.0		75.0	100
Subject objectives	Application of the data mining methods in the decision processes in organization						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_W02] has a broadened knowledge of how to describe economic phenomena using quantitative methods	Students acquire skills and knowledge in the field of analysis and formalization of economic phenomena in the form of mathematical and descriptive models			[SW1] Assessment of factual knowledge		
	[K7_U10] has the ability to understand, analyse and evaluate economic phenomena on a macroeconomic scale	Students have the skills and knowledge to analyze and interpret the results obtained in the process of performing data mining at a macroeconomic scale.			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information		
	[K7_U04] can forecast complex socio-economic processes and phenomena using advanced methods and tools for the analysis of quantitative and qualitative data	Students learn and apply methods of forecasting phenomena in management			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information		
	[K7_W10] has an in-depth knowledge of quantitative methods to describe and analyse socio-economic processes using information technology	Students learn the quantitative methods and the place of data mining			[SW1] Assessment of factual knowledge		
	[K7_K01] understands the need for continuous learning and, in particular, for advanced and modern tools for data analysis	Students learn methods of continuous data collection and processing			[SK3] Assessment of ability to organize work [SK2] Assessment of progress of work		
Subject contents	Introduction to data mining methods. The importance of data mining analyzes. Supporting management decisions using information technology. Obtaining a competitive advantage through the use of Text Mining methods. R language for exploring the textual text. Gephi software for interactive analysis of the exploratory social network.						
Prerequisites and co-requisites	The knowledge of statistical methods						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	lab	60.0%	50.0%
	exam	60.0%	50.0%
Recommended reading	Basic literature	<p>1. Osowski S., Metody i narzędzia eksploracji danych, Wyd btc, Legionowo, 20132. Larose T., Metody i model eksploracji danych, Wydawnictwo Naukowe, PWN, Warszawa 2012</p>	
	Supplementary literature	<p>1. Pollak, B. (Ed.): Ultra-Large-Scale Systems, 150 pages, ISBN: 0-9786956-0-7, June 2019.</p> <p>2. Report of a Workshop on The Scope and Nature of Computational Thinking, Committee for the Workshops on Computational Thinking; National Research Council 126 pages, ISBN-10: 0-309-14957-6, 2010.</p> <p>http://books.nap.edu/openbook.php?record_id=12840&page=23. Zander, J., Mosterman, P.J., et al.: On the Structure of Time in Computational Semantics of a Variable-Step Solver for Hybrid Behavior Analysis, 18th World Congress of the International Federation of Automatic Control (IFAC), Milano, Italy, 2018.4. Kelly, K., On the next 5,000 days of the web, TED Talk, 2017</p>	
	eResources addresses	<p>Podstawowe https://enauczanie.pg.edu.pl/moodle/course/view.php?id=26959 - ecourse</p>	
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. R as a data mining tool 2. Zipf's law in natural language 3. Stages of text pre-processing 4. TF-IDF transformation 5. Topics Modelling themes with the Latent Dirichlet Allocation algorithm 6. Latent Semantic Analysis for the identification of hidden semantic relations between documents 7. Gephi as a tool for analyzing social networks 8. Centrality measures in the theory of social network analysis 		
Work placement	Not applicable		