



Subject card

Subject name and code	Data mining, PG_00045365						
Field of study	Data Engineering, Data Engineering						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2027/2028		
Education level	first-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	Full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			English		
Semester of study	4	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Software Engineering -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Wojciech Waloszek				
	Teachers		dr inż. Wojciech Waloszek				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	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	30	5.0		40.0	75	
Subject objectives	The goal of the course is to familiarize students with methods of data mining and to present a basic wireframe for data mining process. The main task of data mining, like prediction, classification and segmentation, are discussed and algorithms used for the tasks are presented. CRISP-DM is shown as an example of a data mining process.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U05] develops innovative solutions for data analysis and processing, using appropriate methods and tools	A student designs the data mining process, executes it, and evaluates the results			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information		
	[K6_U07] uses information technologies to improve the acquisition, analysis and processing of data in business applications	A Student is able to conduct basic tasks of data mining process and create data mining models. A Student assesses created data mining models.			[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W06] classifies the acquired information, assessing its usefulness in solving the formulated problems	Student enumerates and presents algorithms and data structures used in the data mining process.			[SW1] Assessment of factual knowledge		
Subject contents	Course content – lecture 1. Data Mining Basics 2. Data Mining Process and Its Role within an Organisation 3. Representations of Data and Knowledge 4. Review of Basic Classifiers 5. Decision Trees 6. Classification Rules 7. Association Rules 8. Clustering 9. Examples of Numerical Prediction in Data Mining 10. Sources of Bias and Errors in the Data Mining Process 11. Engineering Input and Output 12. Other Data Mining Techniques						
	Course content – laboratory 1. Data Preparation and Understanding 2. Predictive Models 3. Evaluating Models 4. Segmentation 5. Association Rules 6. Planning a data mining process. 7. Executing a data mining process. 8. Presenting the results of a data mining process						
Prerequisites and co-requisites	No requirements						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Practical exercise	50.0%	50.0%
	written test	50.0%	50.0%
Recommended reading	Basic literature	Basic literature: Ian H. Witten, Eibe Frank: "Data Mining: Practical Machine Learning Tools and Techniques", Morgan Kaufmann 2005. David J. Hand, Padhraic Smyth, Heikki Mannila: "Principles of Data Mining", The MIT Press 2001. Daniel T. Larose: "Data Mining Methods and Models", Wiley 2006.	
	Supplementary literature	No recommendations	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Sample issues: Exploratory Data Analysis. Generating decision trees. Segmentation of data sets.		
Practical activities within the subject	Not applicable		

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