GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Data Warehousing and Data Mining, PG_00047850		
Field of study	Biomedical Engineering		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2024/2025
Education level	first-cycle studies	Subject group	Optional subject group 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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Biomedical Engineering -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Jacek Rumiński	
	Teachers	prof. dr hab. inż. Jacek Rumiński	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	15.0	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	3.0	42.0	75

Subject objectives

The aim of the course is to introduce students with knowledge and skills in the basics of data warehouse and data mining.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study	Student skills gained: - Model a multidimensional data warehouse - The conversion of the source data and transfer them to the data warehouse - Preparing data for data mining, - Selection method, algorithm and data mining software,	[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment
[K6_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	Students have knowledge about: - Modelling of a multidimensional data warehouse - The conversion of the source data and transfer them to the data warehouse - Multidimensional data analysis and formulation of proposals, - Preparing data for data mining, - Selection method, algorithm and data mining software, - Visualization of the knowledge obtained from data mining, - Quantitative evaluation of obtained rules.	[SW1] Assessment of factual knowledge

Subject contents

1. Database vs. data warehouse - basic terms 2. Data warehouses - data models 3. Data warehouses - data analysis 4. OLAP - OnLine Analytical Processing 5. Examples of systems and solutions 6. Databases of XML documents 7. Transformation of structures and data 8. Data retrieval 9. Basis of data mining - applications and methods 10. Data preprocessing 11. Association rules 12. Decision trees and data classification 13. Knowledge formulation, filtration and visualization 14. Examples of systems and applications 15.Deep learning

Prerequisites and co-requisites

No requirements

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	51.0%	60.0%
	Written exam	50.0%	40.0%
Recommended reading	Basic literature	Daniel T. Larose, Odkrywanie wiedzy z danych Wprowadzenie do eksploracji danych, PWN, 2006 Jiawei Han, Micheline Kamber, Data Mining: Concepts and Techniques, Morgan-Kaufmann, 2006 Materiały do przedmiotu opracowane w formie edukacji na odległość, dostęp: http://uno.biomed.gda.pl Matthias Jarke, Maurizio Lenzerini, Yannis Vassiliou, Panos Vassiliadis, Hurtownie danych. Podstawy organizacji i funkcjonowania, WAiP, 2003. Skrypt z materiałami do przedmiotu Hurtownie i eksploracja danych W3C, Rekomendacje XML i HTML, www.w3.org		
	Supplementary literature	No requirements	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		