University of Gdańsk

Subject card

Subject name and code	Data Mining, PG_00199682		
Field of study	International Economic Relations		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master's studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	Polish
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	5.0	0.0	20

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	20	0.0	5.0	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_W13] has an in-depth knowledge of 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 complete a project assignment in the field of data mining and consults its assumptions and progress with the course instructor during consultation sessions and project workshops. Project workshops are included in the course schedule, while the dates and locations of consultation sessions are published on the University of Gdańsk website.	[SW2] presentation/project/paper/ report [SW5] implementation of a problem task
[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

<table>
<tr><td>Subject contents</td><td>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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td><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></td></tr>
<tr><td>Recommended reading</td><td><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, The elements of statistical learning: Data mining, inference, and prediction. New York: Springer 2001.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Analysis of the structure of databases
2 Types of databases
3 Statistical methods in database analysis</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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