University of Gdańsk

Subject card

Subject name and code	Analysis of Business Models and Data, PG_00178113						
Field of study	Informatics and Econometrics						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	Bachelor's 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	5		ECTS credits		7.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Department of Econometrics -> Faculty of Management -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Anna Zamojska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	15.0	0.0	0.0	75
	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	75		4.0		96.0	175
Subject objectives	Gain practical skills for analysing datasets, modelling their interdependencies, and visualising data and the obtained results.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[IiEL3_U04] Students can build and interpret models of economic and social phenomena and processes for decision-making processes.	The student applies appropriate data analysis methods and constructs and interprets a business model that reflects a selected economic or social phenomenon, considering its application in managerial decision-making.	[SU2] presentation/project/paper/ report
[IiEL3_U02] Students can select or construct econometrics, informatics or statistics tools and apply them to describe and solve economic and social problems.	The student selects appropriate data analysis methods and statistical, IT, and/or econometric tools, and then applies them to build business models that aim to solve economic and social problems.	[SU4] test/exam - oral or written
[IiEL3_U06] The student can use and integrate knowledge of management and quality sciences, economics, and finance to resolve dilemmas and complex problems that arise in professional work.	Students combine their knowledge of management, economics and finance and apply appropriate data analysis and business modelling methods to solve decision-making problems encountered in business practice.	[SU4] test/exam - oral or written
[IiEL3_W04] The student has advanced knowledge and understanding of human roles, places, and behaviour in organizations or projects, both as individuals and in group and organizational dimensions.	The student analyses data on individual and group behaviours within an organisation, identifies behavioural patterns, and interprets their impact on organisational functioning and project implementation using business models and analytical tools.	[SW2] presentation/project/paper/ report
[IiEL3_U03] Students can obtain data from appropriately selected sources, use these data to solve economic and social problems, and process and interpret them using econometrics, informatics or statistics tools.	The student creatively analyses the acquired data, compares it with existing theories, and proposes new solutions. Then, the student clearly and communicatively presents the results of the analyses in verbal and written form.	[SU2] presentation/project/paper/ report
[IiEL3_W03] To an advanced degree, the student knows and understands how an organization functions, the phenomena, processes and relationships occurring in its environment, and their impact on its functioning.	The student identifies and analyses complex phenomena, processes, and relationships occurring within an organisation and in its environment based on empirical data and explains their impact on the organisation's functioning using business models.	[SW4] test/exam - oral or written

Subject contents

1. Data mining: data sources, business data acquisition methods, data compilation, time series versus cross-sectional series, and absolute versus relative capture.
2. Data visualisation - presentation of analysis results (temporal, hierarchical, network, multidimensional visualisations), examples of data visualisation tools (e.g. Power BI, Tableau); potential errors in communicating information.
3. Survey data analysis: specifics of survey research, problems of cross-sectional data sets, sample specifics, homogeneity and heterogeneity, influential and outlier observations, missing data, non-random samples.
4. Sales data analysis: Calculating the optimal offer, determining customer value, and applying the economic order quantity model.
5. Demand analysis: estimating the demand curve, pricing related products, predicting customer behaviour, product/customer segmentation, modelling stock levels under uncertain demand.
6. Analysis of qualitative phenomena: binary variable models, among others.
7. Scoring: credit, marketing, debt collection.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Project	51.0%	50.0%
Written test	51.0%	50.0%

Recommended reading

Basic literature

1. Cameron A.C., Trivedi P.K. (2005), Microeconometrics, Cambridge University Press, http://cameron.econ.ucdavis.edu/mmabook/mma.html
2. Gruszczyński M. (2012), Mikroekonometria, Wolters Kluwer.
3. Gruszczyński M. (2014), Zbiór zadań z mikroekonometrii, Wolters Kluwer.
4. Koop G. (2011), Wprowadzenie do ekonometrii, Wolters Kluwer.

	Supplementary literature	1. Borooah K.V. (2002), Logit and Probit: Ordered and Multinominal Models. SAGE Publications Inc. 2. Woolridge J.M. (2012), Introductory Econometrics. A Modern Approach, South-Western Cengage Learning.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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