University of Gdańsk

Subject card

Subject name and code	Data management and business analytics, PG_00199012						
Field of study	Economics						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	Bachelor'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	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		3.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Przemysław Borkowski, prof. UG				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	0.0	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		0.0		45.0	75
Subject objectives	The aim of the course is to familiarize students with analytical and calculation tools used in enterprise management. The program content includes the use of advanced calculation functions to make strategic and operational decisions, simulations of operational decisions, reporting and data visualization. The subject will be based on the analysis of real business cases using calculation tools.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[EKONL3_W06] has an advanced knowledge of selected methods and tools, including statistical and econometric techniques, for describing economic agents and structures as well as social institutions and the processes taking place in them	Can use econometric and statistical functions of a spreadsheet; can program own functions and macros to solve a specific, individualized business problem	[SW5] implementation of a problem task
[EKONL3_U01] can correctly interpret economic and social phenomena and apply knowledge of economics, finance and management sciences to explain economic phenomena	Is able to use spreadsheet and database tools to recognize economic relationships and interpret analytical results.	[SU1] oral statement/conversation/ discussion [SU5] implementation of a problem task [SU6] demonstration of practical skills
[EKONL3_W02] has an advanced knowledge of the different types of existing business entities and organisations and public institutions	Uses the LSGE laboratory to obtain industry and general economic data. Can use publicly available databases.	[SW1] oral statement/ conversation/discussion
[EKONL3_K05] correctly identifies, diagnoses and resolves professional dilemmas and different options for solutions	Uses tools such as solver, analytical functions, and what-if analyses to optimize business decisions	[SK5] implementation of a problem task [SK6] demonstration of practical skills
[EKONL3_U02] is able to use the knowledge of theory and data to analyse concrete economic and social processes and phenomena and to analyse these phenomena using methods developed in economics, finance and management sciences	Analyzes investment efficiency, credit issues, financial analysis of the enterprise using spreadsheets. Can perform problem analyses supporting management decisions; uses the consultation mode when preparing such analyses.	[SU1] oral statement/conversation/ discussion [SU5] implementation of a problem task
[EKONL3_K01] recognises the importance of economic knowledge in identifying and solving economic problems and of consulting experts when difficulties in solving them independently	Is able to analyze strategic and financial reports for sectors and individual companies. Uses consultations to resolve interpretation doubts.	[SK1] oral statement/conversation/ discussion [SK6] demonstration of practical skills

Subject contents

1. The role of spreadsheet tools in managerial decision-making; Interface and functions of spreadsheet applications; Basics of data formatting and preparing a sheet for analysis
2. Data sources. Acquiring data from statistical services; Searching for data in academic databases
3. Use of specialized databases. Searching for data in LSEG Eikon; Working in the LSEG lab
4. Advanced spreadsheet functions. Logical functions; Lookup and reference functions; Statistical and mathematical functions; Financial functions
5. Data analysis and decision support. Creating scenarios ("What-If Analysis"); Pivot tables and their application in data analysis; Sensitivity analysis; Data modeling and building simple decision models
6. Simulation of operational decisions. Simulations using tools such as Solver and Scenario Analysis; Optimization (e.g., cost minimization, profit maximization); Monte Carlo simulations (using available add-ins or simplified models)
7. Data visualization, reporting, and presentation. Creating charts (bar, line, pie, waterfall, heat maps); Principles of clear data visualization; Creating automated reports; Data consolidation from various sources (Power Query basics)
8. Macro programming. Designing custom analytical solutions; Creating user-defined functions; Basics of macro creation
9. Business case studies. Analysis of real or realistic decision-making scenarios; Building decision models based on case study data; Interpretation of analysis results and managerial recommendations
10. Group / individual projects. Developing a spreadsheet model to support operational or strategic decisions; Solving assigned problems using spreadsheet tools (individual/group work + consultations); Presenting results and justifying proposed solutions

Any doubts regarding the issues discussed during classes can be discussed during consultations.

Prerequisites and co-requisites

Knowledge of basic economic terms. Basic knowledge of statistics.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
excel file	51.0%	50.0%
discussion	51.0%	25.0%
discussion	51.0%	25.0%

Recommended reading	Basic literature	P. McFedries, Excel 2021 i Microsoft 365 Formuły i funkcje, APN Promise, 2022. P.Borkowski, Excel w finansach i zarządzaniu, Materiały szkoleniowe, Gdańsk 2025 [udostępniane] Materiały szkoleniowe Eikon, LSGE, 2025 [udostępniane]
	Supplementary literature	MrExcel [forum internetowe]
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Interpreting the meaning of the result 2. Justification of the decision 3. Justification of the selection of tools 4. Operationalization of the use of tools - questions about the method of application of tools	
Work placement	Not applicable	

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