GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	INFORMATION TECHNOLOGY IN MANAGEMENT, PG_00070990		
Field of study	Engineering Management		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
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	Part-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Informatics In Management -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Anna Baj-Rogowska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	27.0	0.0	0.0	27

E-learning hours included: 0.0

eNauczanie source address: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=47432

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	27	3.0	45.0	75

Subject objectives

Preparation of students to apply information technologies to improve data analysis and optimize management processes, based on knowledge of principles for assessing the reliability and quality of data in management, optimization methods, and spreadsheet functionalities, while fostering responsible use of data and analytical independence in the context of supporting managerial decision-making in a business environment.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U03] collaborates with others in solving interdisciplinary problems.	is able to collaborate effectively with representatives of various departments and specializations, applying information technology tools to the design and implementation of IT solutions supporting management processes.	[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task
[K6_K02] is prepared to make competent and ethical decisions to create and maintain economic, social, and environmental values, demonstrating entrepreneurial actions.	is ready to make informed and ethical decisions regarding the implementation and use of information technologies in management, taking responsibility for their organizational and social consequences.	[SK5] Assessment of ability to solve problems that arise in practice

Subject contents	Course content – laboratory 1. Data reliability and quality in management. 2. Streamlining business tasks with the use of the Excel application. 3. Basic data operations (importing external data, sorting and filtering operations). 4. Functions (mainly math, text, statistics, search, etc.). Nesting functions. 5. Advanced data processing using functions. 6. Macros. 7. Building applications in MS Excel. 8. Introduction to Solver. The Simplex Method. 9. Decision problems using the nonlinear GRG method. 10. Decision problems using the evolutionary method.
Prerequisites and co-requisites	
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
Assessment of the correctness and completeness of the analytical tasks' solution implemented in a spreadsheet (e.g., MS Excel).	60.0%	60.0%
Evaluation of the applicability and proper usage of the optimization method within MS Solver in the context of solving a managerial problem.	60.0%	40.0%

Recommended reading	Basic literature	1. M. Alexander, R. Kusleika, J. Walkenbach, Excel 2019 PL. Biblia, Wydawnictwo Helion, 2021. 2. J. Walkenbach, M. Alexander, Analiza i prezentacja danych w Microsoft Excel. Vademecum Walkenbacha, Wydawnictwo Helion, 2021. 3. B. Jelen, Excel 2021 i Microsoft 365. Przetwarzanie danych za pomocą tabel przestawnych, Wydawnictwo Promise, 2022. 4. H. Tyszka, Excel Solver w praktyce. Zadania ekonometryczne z rozwiązaniami, Wyd. Helion, 2021. 5. A. Baj-Rogowska, Decyzje optymalne z Solverem, Wydawnictwo Politechniki Gdańskiej, Gdańsk, 2020.
	Supplementary literature	1. Walkenbach J., Excel 2013 PL. Biblia, Helion 2. Cox J., Microsoft Office 2010 dla użytkowników domowych i uczniów. Krok po kroku, RM 2010 3. Wrotek W., Excel 2010 PL. Rozwiązywanie problemów dla każdego, Helion 2010
	eResources addresses	
Example issues/ example questions/ tasks being completed	• Applications of VLOOKUP to automate tasks. • Using a pivot table as an interactive tool to quickly analyze, summarize, and compare large data sets without writing complex formulas. • Automating frequently repeated tasks using macros. • Building applications in MS Excel. • Determining the optimal location, e.g., for a company's warehouse.	
Practical activites within the subject	Not applicable	

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