University of Gdańsk

Subject card

Subject name and code	Data analysis and visualisation in business, PG_00199384		
Field of study	Economics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
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	2	Language of instruction	Polish
Semester of study	3	ECTS credits	4.0
Learning profile	academic	Assessment form	credit
Conducting unit	Division of Electronic Economy -> Department of Maritime Transport and Seaborne Trade -> Faculty of Economics -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Dagmara Wach	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	30.0	0.0	30.0	0.0	60

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	60	0.0	40.0	100

Subject objectives

The aim of this course is to provide students with practical skills in business data analytics. During the course, students will gain knowledge about the use of tools such as Google Analytics and Google Tag Manager, which are used to collect and analyze data related to website activity. Additionally, during classes they will learn various data visualization techniques, using specialized software to process information obtained from various sources. While working on their projects or in case of difficulties, students may use consultations with the instructor to deepen their knowledge and receive substantive support.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[EKONMU2_U08] can independently analyse economic and social phenomena and processes, and can perform a theoretically deepened assessment of such phenomena, using appropriately selected research method	The student is able to properly analyze business data, interpret and use the information obtained to improve the competitiveness of the company.	[SU2] presentation/project/paper/ report
	[EKONMU2_U02] can use acquired knowledge to describe and analyse the causes and course of economic and social processes and phenomena, and can formulate his/her own opinions and critically select data and analysis methods based on the achievements of economic and social sciences	The student is able to use theoretical and specialist knowledge in the selection of methods and tools supporting the analysis of business data, including obtaining internet data and using available metrics in data analysis, applying this knowledge in implemented projects.	[SU2] presentation/project/paper/ report
	[EKONMU2_K02] is aware of the level of their knowledge in the area of solving complex problems in economic,; understands the need to extend and update this knowledge throughout his/her life	The student is aware of the level of his/her knowledge, is able to independently supplement and improve the acquired knowledge in the field of data analysis, is open to new technologies and is able to share his/her experience and knowledge with others.	[SK2] presentation/project/paper/ report
	[EKONMU2_K05] correctly identifies, diagnoses and solves advanced dilemmas and alternative solutions related to the profession	The student correctly identifies, diagnoses and resolves dilemmas and various variants of solutions related to work in the field of data analysis.	[SK2] presentation/project/paper/ report
	[EKONMU2_W06] has an in-depth understanding of statistical and econometric methods and tools for describing and modelling macro- and microeconomic economic structures and public institutions, as well as the processes taking place within them.	The student knows the methods and tools for measuring, analyzing and solving issues related to rapidly developing internet technologies and data analysis tools, using this knowledge in implemented projects.	[SW2] presentation/project/paper/ report
	[EKONMU2_W08] has an in-depth knowledge of processes occurring in enterprises and economic organisations and with related areas, as well as of processes of change in public institutions; knows methods of research on the regularities governing these changes, taking into account the influence of external stakeholders on them	The student has in-depth knowledge of the processes taking place in enterprises, knows methods of examining the regularities governing changes in enterprises, taking into account the influence of economic entities cooperating with them on them.	[SW2] presentation/project/paper/ report
	[EKONMU2_U04] can forecast and model complex economic and social processes using quantitative and qualitative methods and tools developed by economic sciences (including statistics and econometrics)	The student is able to analyze quantitative and qualitative data using advanced statistical methods and tools.	[SU2] presentation/project/paper/ report
Subject contents	1. Introduction to data analysis:- review of analytical tools - principles of data collection and interpretation.2. Google Analytics and Google Tag Manager:- advanced tracking techniques in Google Analytics,- introduction to Google Tag Manager,- tag and event management.3. Google Search Console and SEO Tools:- obtaining information from Google Search Console,- use of SEO tools in internet data analysis.4. Data visualization:- use of Power BI in data analysis,- using Power Pivot in Excel to model data,- basics of data visualization in Tableau.5. Looker Studio:- designing and creating reports in Looker Studio,- integration of data from various sources. The student discusses these issues during consultations with the course instructor		
Prerequisites and co-requisites	Knowledge of the basics of e-business.		

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Google Analytics certificate</td><td>51.0%</td><td>50.0%</td></tr>
<tr><td>business data visualization prepared as part of the project</td><td>51.0%</td><td>25.0%</td></tr>
<tr><td>website audit</td><td>51.0%</td><td>25.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. Edmondson M., Google Analytics od podstaw. Analiza wpływu biznesowego i wyznaczanie trendów, Helion, Gliwice 2023
2. Deckler G., Pierwsze kroki w Power BI. Kompletny przewodnik po praktycznej analityce biznesowej, Helion, Gliwice 2023</td></tr>
<tr><td>Supplementary literature</td><td>Zastrożna M., Godzina dziennie z Web Analytics. Stwórz dobrą strategię e-marketingową, Helion, Gliwice 2022
Wach D., Wykorzystanie technologii Real-Time Bidding w e-handlu, Studia i Materiały ITiHM, nr 9, Gdańsk 2012</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2"></td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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