COURSE DESCRIPTION CARD - SYLLABUS

Course name
Marketing Research [S1DSwB1>BM]

Course

Field of study
Data Science in Business

Year/Semester
2/3

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
30

Laboratory classes
0

Other
0

Tutorials
30

Projects/seminars
0

Number of credit points

4,00

Coordinators

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Lecturers

Prerequisites

The student possesses basic knowledge of statistical tests, such as the chi-squared test, Student’s t-test, Pearson correlation, V-Kramer test, and ANOVA analysis, in the context of marketing data analysis. Additionally, the student demonstrates teamwork skills, responsibility for task completion, and actively participates in classes.

Course objective

The objective of this course is to develop students' skills in data analysis in a business context, with a particular focus on research processes in marketing.

Course-related learning outcomes

Knowledge:
Defines the concept of marketing research according to different authors and explains its significance in data analysis and business decision-making [DSB1_W01].
Explains the concepts of exploratory and explanatory research and clarifies the need to apply a specific tool for a given research objective [DSB1_W03].
Presents the principles of reporting analysis results, indicating methods of data visualization and

presentation in the context of marketing [DSB1_W03].

Skills:
Selects appropriate data sources for marketing analysis, evaluating their quality, representativeness, and usefulness in the research process [DSB1_U01].
Applies sampling methods, defines the research population, and selects the analytical unit, considering the representativeness of the sample [DSB1_U02].
Designs the data analysis process, defines research objectives, and formulates analytical hypotheses in the context of marketing issues [DSB1_U03].
Formulates the specification of analytical problems, selects appropriate statistical methods, and machine learning techniques for modeling marketing data [DSB1_U05].
Performs a critical analysis of the data analysis process, evaluating measurement errors, data cleaning quality, and the effectiveness of chosen analytical methods [DSB1_U07].
Uses analytical tools and predictive models to assess the effectiveness of marketing campaigns and analyze consumer behavior [DSB1_U09].

Social competences:
Critically analyzes their own knowledge and skills in marketing research, striving to improve and adapt them to market needs [DSB1_K01].
Takes initiatives in the field of marketing data analysis, proposing new approaches and methods for interpreting results [DSB1_K04].
Takes responsibility for the quality and reliability of analytical reports and their impact on business decisions [DSB1_K05].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Verification of Theoretical Knowledge
The acquired knowledge will be assessed based on partial tests and the final exam, with a maximum possible score of 100%.
a) Partial tests - During the semester, students will complete 10-13 tests on the eKursy platform, covering the content of each lecture. A total of up to 50% of the final grade can be earned from these tests.
b) Final test - covering all material from the lectures, contributing the remaining 50% to the final grade.
c) Oral exam - mandatory for students who have not achieved at least 91% from both partial tests and the final test. Students who score 91% or more in both assessments will receive a final grade of 5.0 without the need for an oral exam.
2. Verification of Practical Skills and Competencies
The assessment of data analysis skills and the application of research methods in practice will be based on the completion of 8-10 projects carried out during the exercises. Each project will be graded on a scale from 0% (project not submitted/absence) to 100% (full completion and meeting the evaluation criteria).
3. Grading Criteria
The final grade for both lectures (tests) and exercises (projects) will be awarded according to the following score ranges:
• 0 - 50% → 2.0 (Fail)
• 51 - 60% → 3.0 (Satisfactory)
• 61 - 70% → 3.5 (Satisfactory plus)
• 71 - 80% → 4.0 (Good)
• 81 - 90% → 4.5 (Good plus)
• 91 - 100% → 5.0 (Very good)

Programme content

The essence, goals, and scope of data analytics in business.
The relationship between Data Science and Business Information Systems.
Features of data analysis in a business context and classification of data analysis methods.
Criteria for data analysis quality and the process flow, including the identification of the business problem, defining the analysis objectives, formulating analytical hypotheses, and developing analytical questions - both main and detailed.

Schedule of the analytical process and organization of the data analysis project, covering time, resources, and technology management.
Selection of the data sample, including defining the research population, characterization of the analytical unit, methods of sample acquisition, and assessing sample size and representativeness.
Data sources - internal and external.
Selection of data analysis methods, including statistical techniques, machine learning, and artificial intelligence.
Creating analytical tools such as data pipelines and predictive models.
Methods and measurement errors in data analysis and the process of data cleaning and preparation within ETL (Extract, Transform, Load).
Exploratory Data Analysis (EDA), qualitative analysis in Data Science, and quantitative analysis using statistical models and AI.
Principles of writing analytical reports and methods for visualizing and presenting data analysis results.

Course topics

Lectures:
1. Introduction to marketing research - essence, objectives, and applications
2. Data analysis process - stages and methodology
3. Classification of data analysis methods - statistics, machine learning, AI
4. Data analysis quality criteria - validity, reliability, credibility
5. Data sources in marketing research - internal and external
6. Sample selection - selection methods and data representativeness
7. Data cleaning and preparation (ETL) - data transformation process
8. Exploratory data analysis (EDA) - visualization and preliminary analysis
9. Quantitative and qualitative analysis in marketing research
10. Statistical tests in data analysis - applications in marketing
11. Predictive models and their use in marketing analysis
12. Identifying measurement errors and their impact on analysis results
13. Creating analytical reports - structure and interpretation of results

Exercises:
1. Defining the analytical problem in marketing
2. Data selection and acquisition - case study analysis
3. Sample selection and data preparation
4. Data cleaning and transformation - basics of ETL
5. Basic statistical tests in marketing research
6. Exploratory data analysis (EDA) - practical applications
7. Creating predictive models in marketing analysis
8. Interpretation of analysis results and drawing conclusions
9. Developing an analytical report based on real-world data
10. Data visualization and presentation of analysis results

Teaching methods

Lecture, discussion, presentation, project, flipped classroom method, Kolb's Learning Cycle

Bibliography

Basic:
Więcek-Janka, E. (2020). Badania marketingowe. Pojęcia, metody, narzędzia. Poznań: Wydawnictwo Poltechniki Poznańskiej.

Additional:
Churchil, G. (2002). Badania marketingowe. Podstawy metodologiczne. Warszawa: PWN.
Więcek-Janka, E., Kujawińska, A. (2011). Projektowanie badań marketingowych. Poznań: Wydawnictwo Politechniki Poznańskiej.
Więcek-Janka, E. (2000). Badania marketingowe [w] Mantura W. (red). Marketing przedsiębiorstw przemysłowych.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	62	2,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	38	1,50