University of Gdańsk

Subject card

Subject name and code	Quantitative and Qualitative Research Methods, PG_00206225		
Field of study	Informatics and Econometrics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master's 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	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English
Semester of study	1	ECTS credits	6.0
Learning profile	academic	Assessment form	exam
Conducting unit	Department of Statistics -> Faculty of Management -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Arkadiusz Kozłowski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	30.0	0.0	0.0	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	4.0	86.0	150

Subject objectives

Gaining knowledge about the essence and purpose of scientific research, the essence of scientific theories and the scientific method. Familiarization with methods of reasoning, inference and generalization.
Getting to know the specificity of quantitative and qualitative methods, acquiring the ability to select a method for the research problem.
Acquiring the ability to search through various economic and financial databases, download data and assess their completeness and reliability. Acquiring the ability to formulate research hypotheses, goals and research questions.
Gaining knowledge about non-exhaustive statistical research. Acquisition of practical skills related to the organization and conduct of sample surveys. Acquiring the ability to critically evaluate the results of surveys, understanding the strengths and weaknesses of the survey. Acquiring the ability to quantitatively summarize research results.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[IiEMU2_W05] Possesses advanced knowledge and understanding of informatics, statistics, and econometrics techniques and tools used to acquire, process, or visualise data to aid in decision-making and verify research hypotheses	The student selects sampling methods for non-exhaustive research; identifies possible sources of error in survey research. The student is able to characterize qualitative research methods: the grounded theory method, the case study method, action research, and ethnographic methods.	[SW4] test/exam - oral or written
[IiEMU2_U03] Is able to obtain and verify data from properly selected sources and to collect, process, and visualize it using modern econometrics, informatics or statistics tools	A questionnaire, code questions, and conduct basic quantitative analysis of the obtained data. Students can obtain data for qualitative research using multiple methods, including analysis of source documents, structured and semi-structured interviews, observation, and participatory observation. Students can obtain data for quantitative research using diverse financial and economic databases, assessing their reliability and completeness.	[SU2] presentation/project/paper/ report
[IiEMU2_U01] Can creatively and profoundly analyze complex social and economic processes using structured knowledge, econometrics, informatics, or statistics tools	The student can explain the complexities of survey research, its advantages, and limitations. The student can interpret the results of qualitative and quantitative research and assess their usefulness in business decision-making.	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[IiEMU2_U04] Can choose, develop, and analyze traditional or innovative models of complex economic and social phenomena to make informed decisions	The student is able to select a research method appropriate to the study's objectives and implementation options. The student is able to select a qualitative research method appropriate to the research problem being addressed.	[SU2] presentation/project/paper/ report
[IiEMU2_W02] Comprehends advanced theoretical and practical concepts in econometrics, informatics, or statistics, which are essential for a deeper understanding of economic and social phenomena	The student identifies socio-economic processes that require the acquisition of knowledge from quantitative and qualitative research.	[SW4] test/exam - oral or written
[IiEMU2_W10] Possesses a deeper understanding of the essential dilemmas of modern civilization, particularly concerning the IT development	The student distinguishes research hypotheses from statistical hypotheses. The student recognizes the problems and challenges associated with applying advanced statistical methods to draw conclusions about reality.	[SW4] test/exam - oral or written
[IiEMU2_U09] Can independently plan and implement the process of learning and improving professional skills in econometrics, informatics or statistics throughout life and guide others in this regard	The student is able to independently search for information about the latest research methods.	[SU2] presentation/project/paper/ report
[IiEMU2_W08] Possesses a comprehensive understanding of the methods, conditions, directions, and dilemmas involved in applying advanced econometrics, informatics or statistics tools in response to dynamic environmental changes	The student identifies processes in financial institutions that require the acquisition of knowledge from quantitative and qualitative research.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>1. The essence of scientific research, theory and scientific method. Research paradigms
2. Methods of reasoning: induction and deduction. Possibilities and limitations of generalization in inductive research
3. The essence of quantitative and qualitative research (types of business research, stages of the research process, importance of secondary and primary data, statistical description and statistical inference)
4. Sample selection in non-exhaustive studies (the essence and determinants of random and non-random sampling techniques, probabilistic and non-probabilistic sampling methods)
5. Data collection techniques (types, pros and cons)
6. Characteristics of survey measurement (questionnaire design, measurement levels and scales, question coding)
7. Accuracy of sample surveys (concept and classifications of errors in sample surveys, random error, coverage error, non-response errors, measurement errors)
8. Economic and financial databases
9. Research hypotheses vs. statistical hypotheses
10. Quantitative data analysis
11. Qualitative methods: case study, grounded theory, ethnographic research, project method, action research</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Project</td><td>51.0%</td><td>50.0%</td></tr>
<tr><td>Written or oral exam</td><td>51.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>• Zikmund W.G., Business Research Methods (5th ed.). The Dryden Press,
• Saunders M., Lewis P., Thornhill P., Research Methods for Business Students. Pearson Education Ltd.
• Malhotra N.K., Marketing Research: An Applied Orientation, Global Edition 7th, Pearson Education Ltd.
• Frost J., Introduction to Statistics: An Intuitive Guide for Analyzing Data and Unlocking Discoveries. Statistics By Jim Publishing.</td></tr>
<tr><td>Supplementary literature</td><td>• Szreder M. Kozłowski A., Wnioskowanie na podstawie prób losowych i nielosowych, Wydawnictwo UG, Gdańsk 2024.
• Oakshott L., Essential quantitative methods for business, management and finance, Bloomsbury Academic, London 2020.
• Aczel A.D., and Sounderpandian J., Complete business statistics, McGraw-Hill Higher Education, Boston 2009.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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