

Subject card

Subject name and code	Methods and Tools of Economic Research, PG_00199433						
Field of study	International Economic Relations						
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			Polish		
Semester of study	2	ECTS credits			3.0		
Learning profile	academic	Assessment form			exam		
Conducting unit	Department of Macroeconomics -> Faculty of Economics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Wojciech Bizon				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	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		15.0	75
Subject objectives	The purpose of the course is to provide students with the necessary knowledge and skills in the use of available tools in conducting economic research necessary in the development of thesis work, as well as to familiarize them with the possibilities of using Statistica and Excel in advanced data analysis.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[MSGMU2_W13] has an in-depth knowledge of methods and tools for describing economic phenomena, including data acquisition techniques, which make it possible to describe and analyse economic entities functioning on the international market as well as processes and phenomena occurring in them and between them, and also those supporting decision-making processes	knows and understands the most important methods and tools for describing economic phenomena	[SW4] test/exam - oral or written
	[MSGMU2_K01] is ready to recognise the importance of knowledge of economics in the process of identifying and solving problems in the area of international economic relations and to consult experts in case of difficulties in solving them independently	understands the importance of knowledge in economics	[SK4] test/exam - oral or written
	[MSGMU2_U11] independently formulates and tests hypotheses related to simple research problems, appropriately selects and applies methods and tools, including statistical tools and data acquisition techniques in order to verify hypotheses and diagnose economic processes, and on this basis to take appropriate economic decisions	independently formulates statistical hypotheses	[SU4] test/exam - oral or written
	[MSGMU2_U01] can creatively interpret and explain complex and atypical economic phenomena and the relations occurring between them, using the acquired knowledge in economics, finance and international economic relations	can interpret and explain unusual economic phenomena	[SU4] test/exam - oral or written
	[MSGMU2_U06] can identify types of risks related to international operations of enterprises and correctly determine their consequences and methods of mitigation, with a skilful application of theory, using appropriate research method	understands the issue of risk in economic research	[SU5] implementation of a problem task
	[MSGMU2_U02] can observe, evaluate and critically analyse the causes and course of processes and phenomena taking place in the open economy; can formulate his/her own opinions on the subject, interpret statistical data and economic indicators necessary in this respect, and also forecast economic processes and phenomena using advanced methods and tools applied in economic sciences	knows how to use economic research tools in describing economic reality	[SU5] implementation of a problem task
	[MSGMU2_K02] is ready to critically assess the level of acquired knowledge, skills and professional competence in the area of international economic relations	Is aware of the vastness of available knowledge and their own shortcomings	[SK4] test/exam - oral or written
	[MSGMU2_K06] is ready to independently identify, diagnose and responsibly resolve dilemmas and alternative solutions related to his/her profession and the development of professional achievements	is familiar with variant analysis	[SK5] implementation of a problem task

	Course outcome	Subject outcome	Method of verification
	[MSGMU2_U09] can innovatively solve problems in the field of international economic relations and the functioning of economic entities on the international market, adapting existing or developing new methods and tools	is able to solve problems in the area of international economic relations using approaches typical for economic research	[SU5] implementation of a problem task
	[MSGMU2_U14] has a thorough ability to prepare specialist oral presentations on economic and social issues, using specialist theoretical approaches, the principles of collecting data from various sources, their description and interpretation, and drawing conclusions on the basis of scientific literature; can prepare and lead a debate	Knows how to use statistical material to prepare presentations	[SU6] demonstration of practical skills
	[MSGMU2_U10] can accurately select and use sources of information on international economic relations, evaluate, critically analyse and creatively interpret them, and can present them in an innovative way, using advanced information and communication techniques	knows how to analyze statistical and numerical information contained in works on international economic relations	[SU4] test/exam - oral or written
	[MSGMU2_U13] has a thorough ability to prepare specialist written work on economic and social issues, using specialist theoretical and methodological approaches, collecting data from various sources, their description and interpretation, the principles of hypothesis formulation and drawing conclusions on the basis of scientific literature and factual data, and can perform advanced international comparisons	Is able to incorporate quantitative parts into the reports and discussions being developed	[SU6] demonstration of practical skills
Subject contents	<p>Research plan. Research objective and hypotheses. Design of the economic study. Data and their sources. Qualitative and quantitative research. Qualitative research in practice. Observation. Individual interviewing. Group interviews (focus groups). Experiment. (lecture 2 h) Quantitative research in economic practice. Concept and properties of normal distribution. Other distributions of variables. Statistical hypotheses and their verification. Statistical significance. Statistical tests. Generalization of results. (lecture 2 h + computer lab 2 h) Data analysis support tools - STATISTICA (data analysis software system). StatSoft, Inc.: presentation of Statistica program as a tool to support analysis of macroeconomic and microeconomic data. Perform tasks using statistical methods, perform analysis using Excel. (computer laboratory 2 h) Analysis of interdependence of economic phenomena. Use of knowledge of correlation and regression in economy and enterprise. Scatter plot. Pearson's and Spearman's correlation coefficients. The explanatory and explanatory variable. Regression function. (Lecture 2 h + computer lab 2 h) Evaluating the effectiveness of changes in economic parameters. Comparisons against groups. Tests for independent and dependent samples. (lecture 2 h + computer laboratory 2 h) Search for similar economic arrangements and market segmentation. Cluster analysis - multivariate clustering of objects. Spatial variation of economic variables. Methods of optimal allocation. The k-means method. (lecture 2 h + computer lab 2 h) Creation of valuable research questionnaires. Reliability and item analysis. Cronbach's alpha. Elements of factor analysis. Bartlett and KMO tests. Shape of questions in a questionnaire. (lecture 4 h + computer lab 4h)</p> <p>Any doubts related to the lecture topics and questions regarding the course material are addressed during consultation hours. Participation in consultations enables the clarification of substantive issues and deepens the understanding of subject-related concepts.</p>		
Prerequisites and co-requisites	Basics of descriptive statistics		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	50.01%	100.0%
Recommended reading	Basic literature	Balicki A., Makać W., <i>Metody wnioskowania statystycznego</i> , Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2007. Sobczyk M., <i>Statystyka matematyczna</i> , Wydawnictwo C.H. Beck, Warszawa 2010. Rószkiewicz M., <i>Metody ilościowe w badaniach marketingowych</i> , Wydawnictwo Naukowe PWN, Warszawa 2002 lub 2014.	

	Supplementary literature	<p>Stanisz A., <i>Przystępny kurs statystyki z zastosowaniem STATISTICA PL na przykładach z medycyny</i>, StatSoft Polska, Kraków 2006.</p> <p>Internetowy Podręcznik Statystyki, http://www.statsoft.pl/textbook</p> <p>Bizon W., <i>Dobrobyt społeczno-ekonomiczny oraz gospodarka oparta na wiedzy w kontekście historycznych podziałów na Polskę A i Polskę B</i>, "E-mentor" nr 4/2011.</p> <p>Bizon W., <i>Pomiar efektywności nauczania opartego na symulacjach biznesowych i studiach przypadków</i>, [w:] A. Poszewiecki, W. Bizon, P. Kulawczuk [red.], <i>Symulacje menedżerskie i studia przypadków. Szkolenia biznesowe w oparciu o symulacje menedżerskie i studia przypadków najlepsze praktyki</i>, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2012.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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