

Subject card

Subject name and code	Quantitative Methods in Making Market Decisions, PG_00171445						
Field of study	Economics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Specialty subject group		
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		2.0		
Learning profile	academic		Assessment form				
Conducting unit	Department of International Economics and Economic Development -> Faculty of Economics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Dorota Ciolek				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	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	15		10.0		25.0	50
Subject objectives	Providing students with the ability to use statistical and econometric methods to carry out research tasks, verify economic hypotheses and forecasting.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[EKONMU2_U03] can analyse causes and course of economic and social processes and phenomena, formulate his/her own opinions on the subject, construct research hypotheses, and select and apply methods of their verification	using econometric modeling conducted with appropriate software, student analyzes the relationships between economic variables in macro- and micro-level	[SU1] oral statement/conversation/discussion
	[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)	determines forecasts of economic variables using selected methods; builds, verifies and interprets econometric models used to analyze specific hypotheses	[SU5] implementation of a problem task
	[EKONMU2_U01] can creatively interpret and explain economic and social phenomena and relations between them, using acquired knowledge of economics, finance and management sciences	interprets the results of empirical analyzes obtained using advanced econometric modeling methods and assesses the possibility of their application in the process of making market decisions	[SU1] oral statement/conversation/discussion
	[EKONMU2_U15] can independently expand and improve acquired knowledge and skills in economics; is open to new ideas and techniques; tends to learn using any accessible method and to interact with other participants of the learning process	interprets and critically evaluates the results of econometric modeling and statistical analyzes performed by other people	[SU5] implementation of a problem task
	[EKONMU2_K01] recognises the importance of knowledge in the field of economics in the process of identifying and solving economic problems and of consulting experts when having difficulties in solving them independently	justifies the possibility and validity of using specific statistical and econometric methods in the process of making market decisions	[SK1] oral statement/conversation/discussion
	[EKONMU2_K02] is aware of the level of his/her knowledge in the field of economics; understands the need to extend and update this knowledge throughout his/her life	discusses and critically evaluates the results of quantitative analyses, both his own and those obtained by other students	[SK5] implementation of a problem task
	[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	collects and develops appropriate statistical data, based on which he builds and estimates econometric models at an intermediate level of advancement	[SU5] implementation of a problem task
Subject contents	[EKONMU2_W06] knows statistical and econometric methods and tools for description and macro- and microeconomic modelling of economic structures and public institutions and processes occurring in them	adapts appropriate methods of statistical analysis and econometric modeling to the assigned research task	[SW5] implementation of a problem task
	1. Statistical data in economic research: their sources and processing. Atypical observations. Imputation of missing observations.2. Revision of statistics: basic characteristics of descriptive statistics, distribution of variables and parameter estimation. Statistical charts. Hypothesis verification. Correlation analysis. Variance analysis.3. Cause-and-effect modeling of selected economic categories. Practice of constructing a single-equation economic model, principles of model verification, methods of its interpretation and use.4. Panel data modeling. Selecting the right model. Verification and interpretation.5. Models for qualitative variables: logit regression. Selection of variables. Model evaluation.6. Elements of spatial econometrics: matrix of spatial weights, basic spatial models. As part of their own work, students solve problem tasks using econometric modeling. The solutions to these tasks and any problems in their implementation are discussed during consultations with the lecturer.		
Prerequisites and co-requisites	Basics of econometrics, statistics and knowledge of statistical software (Excel, Statistica, Gretl, R)		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Research project - essay	51.0%	80.0%
	Discussion in class	51.0%	20.0%

Recommended reading	Basic literature	Gruszczyński M. <i>Mikroekonometria</i> , Modele i metody analizy danych indywidualnych, Wolters Kluwer Polska Sp. z o.o., 2010; Koop, G. (2013). Wprowadzenie do ekonometrii. Wydawnictwo: Wolters Kluwer; Osińska M., M. Koško, J. Stempińska <i>Ekonometria Współczesna</i> , TNOIK Toruń 2007; Wooldridge, J.M. (2013). Introductory Econometrics: A Modern Approach, Fifth Edition, South-Western, Cengage Learning.
	Supplementary literature	Ciołek, D., Brodzicki, T. (2016). Determinanty produktywności polskich powiatów. Bank i Kredyt, 47 (5), 463-494; Ciołek, D., Brodzicki, T. (2016). Determinanty działalności eksportowej polskich firm produkcyjnych, Gospodarka Narodowa, 282(2), 59-76; Nickell, S. (1997). Unemployment and Labor Market Rigidities: Europe versus North America, The Journal of Economic Perspectives, 11(3), 55-74.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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