



Subject card

Subject name and code	ECONOMETRICS, PG_00058562						
Field of study	Economic Analytics						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2024/2025		
Education level	first-cycle 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	Part-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			5.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Institute of Applied Mathematics -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Krzysztof Świetlik				
	Teachers		dr inż. Krzysztof Świetlik				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	16.0	0.0	16.0	0.0	0.0	32
	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	32		10.0		83.0	125
Subject objectives	The ability to construct a model for a selected economic process, the ability to correctly estimate and verify the model						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U05] Designs innovative solutions to challenging problems by applying knowledge from the field of economic analytics, achieving economically and socially valuable outcomes.		The student is able to build and estimate a model using econometric software.		[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information		
[K6_W05] Possesses advanced knowledge of data integration from multiple sources and advanced analytical methods, enabling the analysis of complex economic problems.		The student is able to identify relationships between phenomena in economics and describe them using an econometric model.		[SW3] Assessment of knowledge contained in written work and projects			
Subject contents	1. The concept of an econometric model.2. Single-equation models. Multiple linear regression.3. OLS estimator and its properties.4. Estimation in the conditions of non-sphericity of the random component.5. Nonlinear models transformable to linear form.6. Dynamization of econometric models.7. Model estimation in the conditions of autocorrelation and heteroscedasticity. Generalized Least Squares method.8. Econometric time series models. Time series decomposition.9. Dummy variables in econometric modeling.10. Econometric forecasting.11. Econometric multi-equation models.12. Indirect Least Squares method.						

Prerequisites and co-requisites	1) Basics of Economics 2) Statistics		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	attendance at lectures	100.0%	15.0%
	written test	60.0%	35.0%
	written exam on the topics discussed during lectures	60.0%	50.0%
Recommended reading	Basic literature	1. G.S.Maddala: Ekonometria, PWE, Warszawa 2006 2. A. Welfe, Ekonometria, PWE, Warszawa 2018 3. M. Doman, R. Doman: Modelowanie zmienności i ryzyka. Metody ekonometrii finansowej (e-book pdf), Oficyna Wolters & Kluwer Business, Warszawa 2016	
	Supplementary literature	1. W. Welfe, A. Welfe: Ekonometria stosowana, PWE, Warszawa 2004	
	eResources addresses	Adresy na platformie eNauczanie: EKONOMETRIA WZIE NS AG s.4 lato 24/25 - Moodle ID: 45321 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=45321	
Example issues/ example questions/ tasks being completed	State the assumptions of linear regression with a model with multiple explanatory variables.State the general form of hypotheses when testing the individual significance of explanatory variables.What are the conditions for the correct performance of the Durbin-Watson test?State and describe the properties of the OLS estimator.What are the consequences of the lack of normality of the random component for KMNK estimated models?What is the phenomenon of autocorrelation?What are the consequences of the occurrence of autocorrelation of the random component?What are the causes of the occurrence of autocorrelation of the random component?		
Work placement	Not applicable		

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