Subject card

Subject name and code	ECONOMETRICS, PG_00066481					
Field of study	Economic Analytics					
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026	
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	Full-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	Department of Statistics and Econometrics -> Faculty of Management and Economics					
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Michał Pietrzak			
	Teachers					

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	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	6.0	59.0	125

Subject objectives	Creates econometric models to analyze economic processes.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W05] Possesses advanced knowledge of data integration from multiple sources and advanced analytical methods, enabling the analysis of complex economic problems.	analyzes cause and effect relationships occurring in economic processes	[SW3] Assessment of knowledge contained in written work and projects
	[K6_U05] Designs innovative solutions to challenging problems by applying knowledge from the field of economic analytics, achieving economically and socially valuable outcomes.	recognizes methods used for estimation and verification of econometric models, choosing the method to fit the defined problem	[SU4] Assessment of ability to use methods and tools

Subject contents	An econometric model and its components.
	Simple and multiple regression.
	Steps in building an econometric model.
	Specification of econometric model.
	Parameter estimation of linear econometric model.
	Method of least squares (LSM) estimation of linear econometric model.
	Stochastic assumptions in an econometric model.
	Economic verification of an econometric model.
	Statistical verification, assessment of the degree of model fit and testing of stochastic properties of the model.
	Estimation of a linear regression model using the method of moments and maximum likelihood.
	Multiplicative models - properties and methods of estimating parameters.
	Autocorrelation property of the random component - causes, effects, measurement, testing and methods of removing causes.
	Heterocedasticity of a random component.
	Generalized least squares method (GLS).
	Parameter estimation under autocorrelation and heteroskedasticity of the random component.
	Cause and effect compatible model.
	Econometric forecasting based on an econometric model.

Prerequisites and co-requisites	matematics, microeconomics, macroeconomics, statistics, mathematical statistics

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	60.0%	50.0%
	colloquium (lab)	60.0%	50.0%

Recommended reading	Basic literature	Kufel ,T. (2022). Ekonometria. Rozwiązania problemów z wykorzystaniem programu Gretl. Warszawa; Wydawnictwo Naukowe PWN Maddala, G.S. (2022). Ekonometria, Warszawa: Wydawnictwo Naukowe PWN Borkowski, B., Dudek, H., Szczęsny, W. (2020). Ekonometria. Wybrane zagadnienia, Warszawa: Wydawnictwo Naukowe PWN
	Supplementary literature	Nowak, E. (2022) Zarys metod ekonometrii. Zbiór zadań, Warszawa: Wydawnictwo Naukowe PWN
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	Consider the following inflation model: $\text{inf}_t = 8{,}0 + 0{,}6\text{inf}_{t-1} - 0{,}7\ r_t + _t$, where: inf_t annual inflation in period t (in%), r_t real interest rate at the beginning of period t (in%). Identify the short-term effect of the impact of the interest rate on the level of inflation and the time-lagged inflation level.
Work placement	Not applicable

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