GDAŃSK UNIVERSITY OF TECHNOLOGY

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 (on-line)	Mode of delivery	blended-learning
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: 24.0						

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.	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools
	[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 models of time series. Time series decomposition.9. Dummy variables in econometric modeling. 10. Econometric forecasting.
Prerequisites and co-requisites	1) Basics on 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 on laboratory	60.0%	35.0%
	written exam	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 online AG lato 24/25 - Moodle ID: 45282 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=45282

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 OLS 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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