GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	ECONOMETRICS, PG_00058562		
Field of study	Economic Analytics		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2023/2024
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	Katedra Statystyki i Ekonometrii -> Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Michał Pietrzak	
	Teachers	dr hab. Michał Pietrzak	

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

Creates econometric models to analyze economic processes.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U05] designs innovative solutions to complex problems obtaining economic and socially valuable results	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
[K6_W05] integrates data from multiple sources to analyze complex economic problems	analyzes cause and effect relationships occurring in economic processes	[SW3] Assessment of knowledge contained in written work and projects

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

mathematics, macroeconomics, microeconomics, 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	Podstawowe http://han.bg.pg.edu.pl/han/ibuk-libra/https/libra.ibuk.pl/reader/ekonometria-rozwiazywanie-problemow-z-wykorzystaniem-programu-gretl-tadeusz-kufel-9303 - Kufel T ., Econometrics. Problem solutions with the use of the Gretl program, Wydawnictwo Naukowe PWN, Warsaw 2022
Example issues/ example questions/ tasks being completed	Consider the following inflation model: $inf_t = 8,0 +0,6inf_{t-1} -0,7 r_t +_t$, 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	