GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	APPLICATION OF ECONOMETRIC METHODS IN MANAGEMENT, PG_00060998			
Field of study	Management, Management			
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025	
Education level	second-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	1	Language of instruction	Polish	
Semester of study	1	ECTS credits	3.0	
Learning profile	general academic profile	Assessment form	assessment	
Conducting unit	Katedra Statystyki i Ekonometrii -> Faculty of Management and Economics			
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Sabina Szymczak		
	Teachers	dr inż. Sabina Szymczak		

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	8.0	0.0	16.0	0.0	0.0	24
	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	24	5.0	46.0	75

Subject objectives	Models phenomena in the field of management and economics using in-depth econometric methods

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_W03] demonstrates in-depth preparation in the application of management methods and techniques for formulating and solving management problems	uses econometric models to solve complex management and economic problems, based on reliable sources of information	[SW1] Assessment of factual knowledge
	[K7_U03] formulates research problems and selects appropriate research methods for their effective solution, using advanced IT tools, and evaluates the obtained results critically	formulates hypotheses and verifies them using advanced econometric models, using IT tools	[SU4] Assessment of ability to use methods and tools

Subject contents	Econometric model - concept, elements and interpretation Classification of econometric models Simple and Multiple Regression Model Estimation Problems - Least Squares Method (LSM) Verification of the estimated form of the model - a measure of the quality of fit Stochastic verification of the estimated form of the model - standard error of estimators and testing the significance of parameters Autocorrelation - causes and testing The concept of conditional econometric forecast Multiplicative models - problems of estimation and interpretation Simple methods of time series analysis - development trend models, seasonality Cause and effect dynamic models - problems of interpretation Cause and effect models of production and work efficiency

Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Passing the laboratory	60.0%	50.0%
	Final test (lecture)	60.0%	50.0%

Recommended reading	Basic literature	Gruszczynski, M. Kuszewski T., Podgórska M.,(red. nauk.), Ekonometria i badania operacyjne. Wydawnictwo Naukowe PWN, Warszawa. Borkowski, B., Dudek, H., Szczęsny, W. (2020). Ekonometria. Wybrane zagadnienia, Wydawnictwo Naukowe PWN, Warszawa. Aczel, A.D., Sounderpandian, J. (2017), Statystyka w zarz¡dzaniu. Wydawnictwo Naukowe PWN, Warszawa.
	Supplementary literature	Materiały Prof. Jerzego Cz. Ossowskiego do Ekonometrii. Welfe, A. (2003) Ekonometria. Metody i ich zastosowanie.Wyd. III zmienione. Polskie Wydawnictwo Ekonomiczne,Warszawa. Maddala G.S. (2006) Ekonometria. Warszawa: WydawnictwoNaukowe PWN Greene W.H. (2012) Econometric Analysis, 7th Edition
	eResources addresses	Adresy na platformie eNauczanie: ZASTOSOWANIA METOD EKONOMETRYCZNYCH zima24 - Moodle ID: 39411 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=39411
Example issues/ example questions/ tasks being completed	Estimate and interpret linear regression model for the number of candidates to college (var. applied), where the regressors are variables: applfee, tuition, and room. Take alfa = 0.1. Write down the formula before and after estimation. Asses the goodness o fit. Test the distribution of residuals using one of the normality tests.	
Work placement	Not applicable	

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