



Subject card

Subject name and code	APPLICATION OF ECONOMETRIC METHODS IN MANAGEMENT, PG_00061051						
Field of study	Management, Management						
Date of commencement of studies	February 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 (on-line)	Mode of delivery			blended-learning		
Year of study	1	Language of instruction			Polish		
Semester of study	2	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: 18.0							
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_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		
[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			
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 zarządzaniu. 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: Wydawnictwo Naukowe PWN Greene W.H. (2012) Econometric Analysis, 7th Edition
	eResources addresses	Podstawowe https://enauczanie.pg.edu.pl/moodle/course/view.php?id=39411 - eNauczanie course Uzupełniające 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 $\alpha = 0.1$. Write down the formula before and after estimation. Assess the goodness of fit. Test the distribution of residuals using one of the normality tests.	
Work placement	Not applicable	

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