



## Subject card

Subject name and code	Application of Econometric Methods in Management and Economy, PG_00037971						
Field of study	Management, Management						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023		
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	2		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Paweł Umiński				
	Teachers		dr Paweł Umiński				
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	Acquainting the students with the most important issues of econometric modelling in economics and management						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U10] uses appropriate methods and techniques to support the decision-making process to solve problems occurring in livestock units		Student uses econometric software for model estimation. Student interprets the results.		[SU4] Assessment of ability to use methods and tools		
	[K7_U02] analyses complex economic processes and phenomena using selected methods and techniques for analysing socio-economic data, and formulates their own opinions and conclusions concerning these processes and phenomena		Student can formulate hypotheses and verifies them using simple and advance econometric models.		[SU4] Assessment of ability to use methods and tools		
	[K7_U04] models and forecasts socio-economic processes using advanced quantitative and qualitative methods		Student estimates econometric models in order to evaluate the relationship between processes in an enterprise		[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information		
	[K7_W07] knows in depth selected methods and techniques of data acquisition, enabling analysis and modelling of structures and socio-economic relations, processes taking place and their impact on the implementation of objectives of the organization, including government administration, local government and non-profit organizations		Student knows the sources of necessary information. Student analyses the data. Student knows the econometric models which can be used to evaluate the relationship between processes in an enterprise.		[SW1] Assessment of factual knowledge		

Subject contents	Econometric models idea, components and interpretation. Classification of econometric models. Problems of estimation the simple and multiple regressions models the Method of Least Squares (OLS). Verification of estimated model goodness of fit. Stochastic verification of estimated model standard errors of estimators and testing the significance of the coefficients. Autocorrelations the causes and testing. The idea of econometric conditional prediction. Multiplicative econometric models problems of estimation and interpretation. Simple econometric methods in time-series analysis. Cause-effect dynamic econometric models problems of interpretation. Cause-effect econometric models of production and productivity. Cause-effect econometric models of labor demand. Cause-effect econometric models of wages. Cause-effect econometric models of inflation.		
Prerequisites and co-requisites	Knowledge of mathematics and statistics.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	pass written exam	55.0%	50.0%
	pass laboratory	55.0%	50.0%
Recommended reading	Basic literature	T. Kufel, Rozwiązywanie problemów z wykorzystaniem programu GRET, wydanie dowolne G. Koop, Wprowadzenie do ekonometrii, Wolters Kluwer, Warszawa 2011 Maddala G.S.: EKONOMETRIA, Wydawnictwo Naukowe PWN, Warszawa 2006	
	Supplementary literature	<a href="#">Mastering Econometrics with Joshua Angrist   Marginal Revolution University (mru.org)</a>	
	eResources addresses	Adresy na platformie eNauczanie: Zastosowania metod ekonometrycznych w ekonomii i zarządzaniu - 2022/23 NSTAC - Moodle ID: 29605 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29605">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29605</a>	
Example issues/ example questions/ tasks being completed	<p><b>Problem 3.</b></p> <p><b>Consider the estimated cause-effect model of wages:</b> <math>\ln W_t = 1,8 + 0,7 \ln APL_t - 0,15 \ln UR_{t-1}</math></p> <p>where: <math>W_t</math> - real wages in period <math>t</math>, <math>APL_t</math> average productivity of labor, <math>UR_t</math> unemployment rate in the end of period <math>t</math> (in %)</p> <p><b>3.1</b> Using antilogarithm, write the model in its primary form.....</p> <p><b>3.2</b> Define and interpret elasticity (effect) of influence productivity of labor (<math>APL</math>) on wages (<math>W</math>):.....</p> <p><b>3.3.</b> Define and interpret elasticity (effect) of influence unemployment rate (<math>UR</math>) on wages (<math>W</math>):.....</p>		
Work placement	Not applicable		