



## Subject card

Subject name and code	Application of Econometric Methods in Management and Economy, PG_00037907						
Field of study	Management, Management						
Date of commencement of studies	February 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	Full-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	Department of Economic Sciences -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr Aleksandra Kordalska					
	Teachers	dr Aleksandra Kordalska dr inż. Karol Flisikowski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	E-learning hours included: 0.0						
Zastosowanie metod ekonometrycznych w zarządzaniu i ekonomii 2022/23 - Moodle ID: 25749 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25749">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25749</a>							
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	45	5.0	25.0	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_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			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
	[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		
[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			

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	Maddala G.S.: EKONOMETRIA, Wydawnictwo Naukowe PWN, Warszawa 2006, Theil, H. (1979), Zasady Ekonometrii, PWN, Warszawa, Goldberger A.S. : Teoria Ekonometrii, PWE, Warszawa 1979	
	Supplementary literature	<a href="http://www.zie.pg.gda.pl/web/katedra-nauk-ekonomicznych/17">http://www.zie.pg.gda.pl/web/katedra-nauk-ekonomicznych/17</a>	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p><b>Problem 3.</b></p> <p>Consider the estimated cause-effect model of wages: <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		