



Subject card

Subject name and code	Econometrics, PG_00050166						
Field of study	Economic Analytics						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022		
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	Full-time studies	Mode of delivery			blended-learning		
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. Jerzy Ossowski				
	Teachers		dr hab. Jerzy Ossowski dr Aneta Sobiechowska-Ziegert				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	0.0	0.0	60
	E-learning hours included: 30.0						
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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	60	10.0	55.0	125		
Subject objectives	Construction, estimation, statistical verification and interpretation of econometric models						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U07] Can use quantitative methods to analyse and solve economic problems using information technologies.	Student can construct the model and estimate it using econometric software.			[SU4] Assessment of ability to use methods and tools		
	[K6_U01] Can correctly identify and describe, using quantitative methods, and interpret economic phenomena and processes and their conditions.	Student can identify the relationships between phenomena in economy and can describe them using econometric model.			[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment		
	[K6_W07] Has the knowledge of sub-disciplines in economics and finance and understands their importance for economic development.	Student knows relationships between economic processes			[SW1] Assessment of factual knowledge		
[K6_W11] Knows quantitative methods to describe and analyse socio-economic processes; understands their conditions and consequences.	Student knows how to construct, estimate and interpret econometric models.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge			

Subject contents	Econometric model and its components. Stochastic assumptions in the econometric model. The least squares method (LSM) of linear econometric model estimation - simple and multiple regression cases. Numerical and stochastic properties of the LSM estimator. Verification of the estimated model - measures of the degree of model fit and testing the significance of structural parameters. Estimation of a linear regression model under classical conditions - the method of moments and maximum likelihood. Multiplicative models - properties, linearization, estimation and interpretation, Autocorrelation - causes, effects, measurement, testing and methods of removing causes. Heterocedasticity - causes, effects, measurement, testing and methods of removing causes. Models of development tendency with seasonality. Econometric forecasting. Generalized least squares method (GLS) - model estimation under the conditions of autocorrelation and heteroscedasticity of random components. Cause-effect dynamic models - assumptions, interpretation, estimation and verification. The cause-effect model of wages. The cause-effect model of inflation. The cause-effect model of production and work productivity. The cause-effect model of the demand for work. Econometric analysis of the business cycle in the Polish economy.		
Prerequisites and co-requisites	matematics, microeconomics, macroeconomics, statistics		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	colloquium (lab)	55.0%	50.0%
	written exam	55.0%	50.0%
Recommended reading	Basic literature	Maddala G.,S.: <i>Introduction to Econometrics</i> , John Wiley & Sons LTD, New York 2001, Seddighi H.R., Lawler K.A. and Katos A.V. : <i>Econometrics; A Practical Approach</i> , Routledge, London and New York 2000.	
	Supplementary literature	Goldberger A.S.: <i>Teoria Ekonometrii</i> , PWN, Warszawa 1972, Klein R. L. [1965], <i>Wprowadzenie do ekonometrii</i> , PWE, Warszawa 1965, Theil H. [1984], <i>Zasady ekonometrii</i> , PWN, Warszawa 1984, Welfe W. (redakcja), <i>Ekonometryczne modele rynku</i> , Tom 1, PWE, Warszawa 1977	
	eResources addresses	Podstawowe https://enauczanie.pg.edu.pl/moodle/course/view.php?id=8976 - Ossowski J. Cz.: Elements of applied econometrics, pr-ts: 1, 2, 3, 4, 5, 6, 7.	
Example issues/ example questions/ tasks being completed	<p>Problem 3.</p> <p style="text-align: center;">Consider the model of inflation: $inf_t = 8,0 + 0,6inf_{t-1} - 0,7 r_t$</p> <p>where: : inf_t anual inflation in period t (w %), r_t real interest rate in beginning of period t (w %).</p> <p>3.1 Define short run effect of influence interest rate on inflation:.....</p> <p>3.2 Define long run effect of influence interest rate on inflation:.....</p>		
Work placement	Not applicable		