Subject card

Subject name and code	Econometrics I, PG_00083483		
Field of study	Economics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Bachelor’s studies	Subject group	Obligatory subject group in the field of study
Mode of study	part-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of International Economics and Economic Development -> Faculty of Economics -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Dorota Ciołek	
	Teachers	dr hab. Dorota Ciołek	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	8.0	0.0	0.0	0.0	8
	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	8	0.0	0.0	8

Subject objectives	Presentation of the econometric model as a tool for hypothesis verification and forecasting in economics and management sciences. Acquiring knowledge and practical skills in building, estimating, interpreting and evaluating econometric models..

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[EKONL3_U04] can predict and forecast the course of economic and social processes and phenomena	is able to build and estimate a single-equation econometric model and verify its forecasting properties and use the model to build forecasts along with assessing their ex ante accuracy	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
	[EKONL3_U03] is able to analyse the causes and course of specific economic and social processes and phenomena, and accurately analyse these phenomena using adequate methods and tools economic and social	is able to build and estimate an econometric model and verify and interpret it	[SU1] oral statement/conversation/ discussion [SU5] implementation of a problem task
	[EKONL3_U02] is able to use the knowledge of theory and data to analyse concrete economic and social processes and phenomena and to analyse these phenomena using methods developed in economics, finance and management sciences	is able to obtain appropriate statistical data and use them to estimate, verify and interpret an econometric model	[SU1] oral statement/conversation/ discussion [SU5] implementation of a problem task
	[EKONL3_U07] is able to participate in analyses and evaluations of alternative solutions to economic and social problems and to choose the methods and instruments to resolve them rationally	can propose an econometric model suitable for verifying specific hypotheses or research goals	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
	[EKONL3_W06] knows in depth of selected methods and tools, including statistical and econometric techniques, for describing economic agents and structures as well as social institutions and the processes taking place in them	knows the basic types of single-equation econometric models, methods of their estimation, tools for their verification and ways of interpreting them in relation to specific relationships in economics and other social sciences	[SW3] text preparation/written work [SW5] implementation of a problem task
	[EKONL3_K05] correctly identifies, diagnoses and resolves professional dilemmas and different options for solutions	is able to interpret the results of estimating an econometric model and use it appropriately in the process of making economic decisions	[SK1] oral statement/conversation/ discussion [SK6] demonstration of practical skills

Subject contents	1. The nature of quantitative economic data: types of statistical data, economic variables as random variables, regression as an econometric model (dependent variable and explanatory variables, structural parameters, disturbances), essence of the error term, various analytical forms of the model, when logarithms and when levels of variables?, Interpretation of parameters in regression 2. Model estimation using OLS: Gauss-Markov theorem, idea of the OrdinaryLeast Squares estimator, numerical conditions of applicability OLS, stochastic assumptions and their importance for OLS properties, OLS matrix formula, theoretical values and model residuals, standard errors of parameter estimation, confidence intervals for parameters 3. Verification of the econometric model: tests of individual and joint significance of parameters, goodness-of-fit measures and their interpretation, tests regarding the error term, methods of dealing with failure to meet assumptions, robust standard errors, RESET test as verification of correctness analytical form 4. Econometric model - additional issues: the impact of data scaling on the results of OLS estimation, the relationship between variables "inverted U" nature - quadratic function in the econometric model, models with interactions of variables, collinearity of variables explanatory factors, high correlation between explanatory variables, VIF (Variance Inflation Factor) measure, comparison of different models - criteria information: AIC, BIC, the problem of endogeneity of explanatory variables
Prerequisites and co-requisites	Knowledge of: - matrix algebra, basics of differential calculus, probability calculus, - descriptive statistics and statistical inference - theory of macroeconomics and microeconomics

Assessment methods and criteria	**Subject passing criteria**	**Passing threshold**	**Percentage of the final grade**
	Written test	51.0%	90.0%
	Active participation in classes	51.0%	10.0%
Recommended reading	Basic literature	Koop G. (2015), Wprowadzenie do ekonometrii, Wolters Kluwer, Warszawa Kufel T.(2004), Rozwiązywanie problemów z wykorzystaniem programu Gretl, PWN, Warszawa Kukuła K. (red.) (2009), Wprowadzenie do ekonometrii, PWN, Warszawa Osińska M., (red), (2007), Ekonometria współczesna, TONiT. Toruń. Strzała K., Przechlewski T., (2006), Ekonometria inaczej. Wydawnictwo Uniwersytetu Gdańskiego.	
	Supplementary literature	Wooldridge J. M. (2013), Introductory Econometrics: A Modern Approach, South-Western Cengage Learning Greene W.H. (2002), Econometric Analysis, New York University. Upper Saddle.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

Document generated electronically. Does not require a seal or signature.