Course title	Econometrics	ECTS code	14.3.EE.PL.3523
		ECTS credits	6

Name of unit administrating study	OTHER	Field of study	Economics	Field of specialisation	L&M;
Teaching staff	Dorota Ciołek, Associate Professor				

Number of hours											
Lectures	15	Classes	15	Tutorials	0	Laboratory	0	Seminars	0	Language classes	0

Forma aktywności		Year&Type of studies*	1 SS2,
Hours with the participation of the academic teacher (including office hours, exams, others):		Semester:	2,
Hours without the participation of the academic teacher (student's self-study, homeworks):		Type of course:	obligatory
Total number of hours:	0	Language of instruction:	English

Teaching form	in-class learning
Teaching methods	Lectures including multimodal presentations, Work in computer laboratories, Case studies,

Prerequisites (required courses and introductory requirements)

Required courses	Micro and macroeconomics, international economics, finance, mathematics as well as descriptive and mathematical statistics taught both at the BA and MA levels.
Introductory requirements	Students should be familiar with the principles of consumer and producer behaviour, basic models of market competition, general equilibrium and growth, international trade, capital and money markets. The knowledge of elementary linear algebra, differential and integral calculus, statistical theory and some skills in the exploratory data analysis are essential.

Assessment method, forms and criteria

Assessment method	Course completion (graded)
Assessment criteria	(50% of the assessment) Students are expected to write an essay of approximately 1500 words (excl. an appendix containing the statistical stuff, tables, references and other forms of documentation) dedicated to the verification of a well established hypothesis learned while attending the core courses in economics. The deadline for its delivery is 2 weeks prior the beginning of examination session. In doing so they are advised to use any data set from those accompanying Gretl. (50% of the assessment) Written theoretical test with open and closed questions.

Course objectives

Provide students with the elementary tools of quantitative analysis in economics.

Learning outcomes

Knowledge	E2_W03	explains how quantitative methods can be used to investigate the relationships between economic phenomena, entities and organizations as well as public institutions functioning in the national, international and intercultural spheres
	E2_W06	adjusts the appropriate methods of statistical analysis and econometric modeling to the given research task

Verification of learning outcomes - Knowledge

Outcomes	written exam	oral exam	test	essay/paper /portfolio	tasks/ homeworks	individual presentation	group presentation	classroom activities	classroom discussion	individual project	group project
E2_W03					X				X		
E2_W06			X						X		

Skills	E2_U01	builds medium-advanced econometric models to explain economic and social phenomena and relations between them
	E2_U02	collects, compiles and analyzes relevant statistical data in order to answer specific research questions

	E2_U03	uses econometric modeling to verify economic research hypotheses
	E2_U04	determines economic forecasts using selected methods and builds, evaluates and interprets econometric models as tools for the analysis of economic processes
	E2_U08	designs and implements research using selected econometric modeling methods
	E2_U15	describes and presents the results of his own analyzes, which used econometric modeling

Verification of learning outcomes - Skills

Outcomes	written exam	oral exam	test	essay/paper /portfolio	tasks/ homeworks	individual presentation	group presentation	classroom activities	classroom discussion	individual project	group project
E2_U01					X					X	
E2_U02					X					X	
E2_U03										X	
E2_U04								X	X	X	
E2_U08						X				X	
E2_U15						X				X	

Attitudes	E2_K01	analyzes critically and evaluates the use of econometric and statistical methods in various economic studies
	E2_K02	complements and improves knowledge of econometric modeling tools and the possibility of using them in economic decision-making processes

Verification of learning outcomes - Attitudes

Outcomes	written exam	oral exam	test	essay/paper /portfolio	tasks/ homeworks	individual presentation	group presentation	classroom activities	classroom discussion	individual project	group project
E2_K01						X		X	X		
E2_K02				X				X	X		

Course contents

An overview of econometrics: the importance of econometrics, types of economic data, working with data (graphical methods, descriptive statistics and correlation).

A non-technical introduction to econometrics: regression as a best-fitting line, interpreting OLS estimates, measuring the fit of regression model, dummy variables.

The econometrics of the simple (multiple) regression model, Y=Xb+u: basic concepts underlying the model, classical assumptions, OLS estimator of b and its properties, confidence intervals for b, hypothesis tests about b, hypothesis tests about error terms (normality, heteroscedasticity, uncorelatedness), the choice of explanatory variables and functional form.

Freeing up classical assumptions: GLS estimator for the regression model with autocorrelated and heteroskedastic errors, IV estimator for the regression model with random explanatory variables correlated with the error term.

Univariate time series analysis: leads, lags and differences in time series variables, the autocorrelation function, the autoregressive and moving average models, (non)stationarity, regression with time series variables.

Recommended reading lists

a) obligatory

Adkins, L.C. (2014). Using gretl for Principles of Econometrics, 4th Edition. https://www.learneconometrics.com/gretl/using_gretl_for_POE4.pdf

Koop, G. (2008). Introduction to Econometrics. Wiley, Chichester

Wooldridge, J.M. (2013). Introductory Econometrics: A Modern Approach, Fifth Edition, South-Western, Cengage Learning

b) supplementary

Ciołek, D., Brodzicki, T. (2017). Spatial dependence structure of TFP in Polish LADs. Acta Univesitatis Lodziensis Folia Oeconomica, 3(329): 73-92

Ciołek, D.. Koralun-Bereźnicka, J. (2018). Industry and size effect in profitability-capital structure relation: empirical evidence from Poland. Romanian Journal of Economic Forecasting, 21(1): 93-107

Greene, W. H. (2008). Econometric Analysis. Prentice Hall, Upper Saddle River

Ramanathan. R. (2002). Introductory Econometrics with Applications. South-Western, Mason

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* SS1- undergraduate studies * SS2 - graduate studies * SDang - doctoral studies
** MSG - International Economic Relations