University of Gdańsk

Subject card

Subject name and code	Econometrics, PG_00153802		
Field of study	Logistics and Mobility		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	postgraduate studies	Subject group	Obligatory subject group in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English English
Semester of study	2	ECTS credits	2.0
Learning profile	academic	Assessment form	
Conducting unit	Katedra Ekonomii Międzynarodowej i Rozwoju Gospodarczego -> Faculty of Economics -> Rektor		
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	15.0	0.0	0.0	0.0	15

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	15	0.0	0.0	15

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
[LMMU2_U03] can analyse causes and course of logistics and mobility processes and systems, formulate his/her own opinions on the subject, construct research hypotheses, and select and apply methods of their verification	can propose an econometric model suitable for verifying specific hypotheses or research goals	[SU1] oral statement/conversation/ discussion
[LMMU2_U15] can independently expand and improve acquired knowledge and skills in logistics and mobility; is open to new ideas and techniques; tends to learn using any accessible method and to interact with other participants of the learning process	can propose an econometric model suitable for verifying specific hypotheses or research goals	[SU1] oral statement/conversation/ discussion
[LMMU2_W06] knows statistical and econometric methods and tools for description and macro- and microeconomic modelling of logistics and mobility processes and systems	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	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[LMMU2_U02] can use acquired knowledge to describe and analyse the causes and course of logistics and mobility processes and systems, and can formulate his/her own opinions and critically select data and analysis methods based on the achievements of economic and social sciences	is able to build and estimate an econometric model and verify and interpret it	[SU5] implementation of a problem task
[LMMU2_K01] recognises the importance of knowledge in the field of logistics and mobility in the process of identifying and solving work-related problems and of consulting experts when having difficulties in solving them independently	can interpret the results of econometric analysis carried out by other people and use them to make decisions	[SK1] oral statement/conversation/ discussion
[LMMU2_K03] inspires and organises preparation of projects in the field of logistics and mobility, following the idea of sustainable development, reconciling legal, economic, ecological, political and social requirements	can propose an econometric model suitable for verifying specific hypotheses or research goals	[SK5] implementation of a problem task
[LMMU2_U04] can forecast and model complex economic and social processes, as well as logistics and mobility processes and systems using quantitative and qualitative methods and tools developed by economic sciences (including statistics and econometrics)	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 [SU5] implementation of a problem task

Subject contents	1) The nature of economic data:- overview of the kinds of data sets that are used in business, finance, economics, and other social sciences - discussion of the difficulties associated with the inference of causality in the social sciences- econometrics as a tool of testing economic theories and evaluating policy effects when we must rely on nonexperimental data- econometric model used for predicting the dependent variable 2) Simple and Multiple Linear Regression Model- the study the relationship between two variables - multiple regression analysis as the most widely used vehicle for empirical analysis in economics and other social sciences- interpretation of the regression model as a tool of ceteris paribus analysis 3) Estimation of the parameters using the method of Ordinary Least Squares (OLS) - idea of OLS - interpreting the OLS regression equation- OLS fitted values and residuals- goodness-of-fit to the empirical values- statistical properties of OLS for the parameters in an underlying population model- consistency of OLS- the variance of the OLS estimators - efficiency- testing of OLS assumptions- robust standard errors 4) Model estimation - special issues - including irrelevant variables in a regression model- omitted variable bias- multicollinearity - highly correlated explanatory variables- outlying observations- using logarithmic functional forms- models with quadratics- models with interaction terms 5) Regression of Qualitative Information: Dummy Variables- describing qualitative information - binary variable- dummy explanatory variable- interpreting Coefficients on Dummy Explanatory- dummy variables for multiple categories 6) Time Series Data - Basic Regression - the nature of time series data- trends and seasonality- Unit Root tests and integrated values
Prerequisites and co-requisites	Student should be familiar with the principles of consumer and producer behavior, basic models of marker competition. General equilibrium and growth, international trade, capital and money markets. The knowledge of elementary linear algebra, differential ant integral calculus, statistical theory.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Activity in classes	51.0%	10.0%
Own project - essey	51.0%	90.0%

Recommended reading

Basic literature	Koop G., Introduction to Econometrics., John Wiley and Sons, (2008) Wooldridge J.M., Introductory Econometric. A modern approach. , South-Western Cengage Learning (4e - 2009 or 5e - 2013) Ramanathan R., Introductory Econometrics with Applications. South-Western, Mason (2002)
Supplementary literature	Verbeek M., A guide to Modern Econometrics., John Wiley & Sons, Ltd (2e-2004) Greene W.H., Econometric analysis., Prentice Hall, Upper Saddle River, (2008)
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable

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