University of Gdańsk

Subject card

Subject name and code	Econometrics, PG_00155553						
Field of study	Management						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	postgraduate 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	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		4.0		
Learning profile	academic		Assessment form				
Conducting unit	Katedra Ekonometrii -> Faculty of Management						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Sabina Nowak				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	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	30		21.0		49.0	100
Subject objectives	The course presents the econometric model as a measurement tool for management science and economics. The students will gain knowledge and practical skills in specifying, estimating, interpreting and evaluating econometric models.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[ZARZMU2_K03] The student is aware of the need to identify critical complex problems, including economic and social ones, and to plan ways to solve them under changing and unpredictable conditions.	The student can identify businesses' challenges while operating under uncertainty and risk. They can also forecast selected economic variables and calculate and evaluate forecast errors.	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written
[ZARZMU2_U01] The student has an in-depth ability to interpret socio-economic phenomena and current events in economic policy and economics, independently formulate his own opinions in this area, and propose adequate solutions in the case of changes occurring in these areas.	The student can analyze quantitative data related to socio-economic, political, and economic phenomena.	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
[ZARZMU2_K02] The student is aware of the need to supplement and expand the acquired knowledge and skills and strives to combine knowledge from different fields and disciplines of science interdisciplinarily. The student can inspire others to learn.	The student understands the necessity of enhancing and expanding the understanding of applying quantitative methods in management science and motivates others to acquire this knowledge.	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work
[ZARZMU2_W04] The student has an extended knowledge of the enterprise environment, its factors and changes occurring in this area, as well as the relations, significance and influence of the environment and stakeholders on the functioning of the enterprise. The student has expanded knowledge of tools for diagnosing macro- and micro-environment.	The student ican identify and quantify the factors that affect the business environment.	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[ZARZMU2_U05] The student can correctly select and apply advanced, complex methods and tools used in management and quality studies.	The student can specify, estimate, and properly interpret the econometric model that explains the relationships between the business and its environment.	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU4] test/exam - oral or written

Subject contents

1. Econometrics in economic sciences. Aims and methods of econometrics.
2. Economic model vs. econometric model. Econometric model specifications, structure and classifications. Interpretation of models parameters.
3. Classical linear regression model assumptions. The Ordinary Least Squares method of estimation (OLS). The OLS estimator and its properties. The Gauss-Markow theorem.
4. Model verification. Testing the individual and joint significance of structural parameters. Adding/omitting the independent variables. Tests of restrictions.
5. Testing the classical linear regression model assumptions: homoscedasticity of the error term, lack of autocorrelation, and normality of distribution. General specification test for the linear regression model.
6. The goodness of fit measures.
7. Empirical examples of econometric models.
8. Dynamic econometric model: specification, classification, and selection. Parameters interpretation. Short- and long term, individual and cumulative multipliers: calculation and interpretation.
9. Dummy variables in modelling qualitative and cyclical phenomena.
10. Forecasting with econometric models. Forecast accuracy and forecast errors. Confidence intervals for the predicted variable.

Prerequisites and co-requisites

The student should have a basic understanding of matrix calculus, differential calculus, descriptive statistics fundamentals, and mathematical statistics. This includes the ability to add, multiply, and invert matrices, differentiate functions of one and multiple variables, understanding basic measures of descriptive statistics, and knowledge of statistical hypothesis testing.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Exam: written test	51.0%	50.0%
Credit: written test	51.0%	50.0%

Recommended reading

Basic literature

Koop G., Introduction to Econometrics, 1st ed., Wiley, 2014.
Kufel T., Ekonometria. Rozwiązywanie problemów z wykorzystaniem programu Gretl. PWN, Warszawa 2013.
Maddala G.S., Lahiri, K., Introduction to Econometrics, 4th ed., Wiley 2010.

	Supplementary literature	Gruszczyński M. (red.), Mikroekonometria. Modele i metody analizy danych indywidualnych. Oficyna Wolters Kluwer, Warszawa 2010. Gruszczyński M., Kuszewski T., Podgórska M. (red.), Ekonometria i badania operacyjne. Podręcznik dla studiów licencjackich. PWN, Warszawa 2009. Kukuła K. (red.), Wprowadzenie do ekonometrii w przykładach i zadaniach. PWN, Warszawa 2004
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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