GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	SPATIAL ECONOMETRICS - A TEAM PROJECT, PG_00066559
Field of study	Economic Analytics

Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	second-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	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam

Conducting unit	Department of Statistics and Econometrics -> Faculty of Management and Economics

Name and surname of lecturer (lecturers)	Subject supervisor	dr Aleksandra Kordalska
	Teachers	dr Aleksandra Kordalska

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	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	45	4.0	61.0	110

Subject objectives	Analyzes socio-economic phenomena using spatial data, creating innovative solutions to complex problems as a team

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U01] Develops innovative solutions for complex and unstructured processes, considering unpredictable environmental conditions by synthesizing information from multiple sources	creates innovative solutions to complex and unstructured problems by adapting the methods used to the nature of the analyzed economic phenomena by synthesizing information from many sources	[SU4] Assessment of ability to use methods and tools
	[K7_W02] Understands the significance and interrelationships of key components describing economic processes, drawing on in-depth knowledge aligned with major developmental trends in scientific disciplines related to the field of economic analytics.	identifies interactions in space between variables describing socio-economic phenomena, using knowledge consistent with the main trends in the development of econometric research	[SW1] Assessment of factual knowledge
	[K7_U05] Collaborates with others in team projects, effectively fulfilling both leadership and team member roles to achieve established goals	performs analytical work demonstrating the ability to work in a team	[SU3] Assessment of ability to use knowledge gained from the subject

Subject contents	Introduction to spatial data analysis Classification and visualization of spatial data Drawing quantile, box and other maps in GeoDa and QGis Basics of grouping and classification in spatial studies Concentration and specialization in spatial economic analyzes (location coefficients, Lorenz curve, Gini index, regional specialization indices) Statistical measures and tests in exploratory analysis of spatial data (spatial heterogeneity and autocorrelation) Weight matrices and testing of global and local spatial autocorrelation One-equation and one-dimensional models of spatial regression types of spatial interactions in the econometric model Construction of spatial models with different types of interactions, MP estimation and verification, spatial model selection procedurę Panel spatial models construction The procedure for selecting a panel spatial model Multi-equation MP spatial models of apparently independent regressions Spatial models with jointly interdependent equations
Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Exam	55.0%	50.0%
	Quizzes	0.0%	10.0%
	Project and written test	55.0%	40.0%

Recommended reading	Basic literature	Kopczewska K., Ekonometria i Statystyka przestrzenna z wykorzystaniem programu R Cran, Wyd. CeDeWu Warszawa 2007 Suchecki B. red. nauk., Ekonometria przestrzenna. Metody i modele, analizy danych przestrzennych, Wyd. C.H.Beck, Warszawa 2010 Suchecki B. red. nauk., Ekonometria przestrzenna II. Modele zaawansowane, Wyd. C.H.Beck, Warszawa 2012
	Supplementary literature	Baltagi B.H., Econometric Analysis of Panel Data, 5th ed, Wiley, Chichester 2014 Suchecka J. red.nauk., Statystyka przestrzenna. Metody analizy struktur przestrzennych, Wyd. C.H.Beck, Warszawa 2014
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	Based on the spatial data of the Central Statistical Office, conduct an analysis of the location and concentration of the number of employees by sectors and voivodeships from the selected year
Work placement	Not applicable

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