



Subject card

Subject name and code	Statistics , PG_00049165						
Field of study	Spatial Development						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2022/2023		
Education level	first-cycle 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	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Economic Sciences -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Karol Flisikowski				
	Teachers		dr inż. Karol Flisikowski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	30.0	0.0	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		7.0		48.0	100
Subject objectives	<p>To familiarise students with basic concepts in the field of statistics and methods of testing regularities occurring in mass processes.</p> <p>Shaping the practical skills of using statistical software to process statistical data and interpret the obtained results.</p> <p>Developing creativity in collecting statistical data from public internet sources for the needs of conducting innovative analyses.</p>						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W03] has elementary knowledge in the field of mathematics and physics relating to issues related to space management, including the basic mathematical methods used in urban design, as well as analytical and design methods using information technology used in planning processes of settlement structures		The student can choose the description method depending on the data type, using both accounting calculations and statistical software.		[SW3] Assessment of knowledge contained in written work and projects		
	K6_U04		The student can interpret the results of his/her statistical analyzes.				
	[K6_U07] evaluates the usefulness of standard methods and tools used in planning and management of spatial development and is able to select and apply the most appropriate ones		The student has a basic knowledge of the spatial nature of socio-economic phenomena. The student knows and can choose the appropriate tools for the analysis of spatial phenomena.		[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information		

Subject contents	<ul style="list-style-type: none"> • Variables type. Measurement scales. • Grouping and presentation of statistical material • Measures of central tendency and diversity • Asymmetry and kurtosis measures • Analysis of relationship between qualitative variables • Analysis of relationship between quantitative variables • Regression • Dynamics analysis - index method • Dynamics analysis - trend and seasonality models • Spatial weight matrices • Visualization of spatial data • Spatial autocorrelation • Spatial regression models 														
Prerequisites and co-requisites															
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 465 794 495">Subject passing criteria</th> <th data-bbox="799 465 1137 495">Passing threshold</th> <th data-bbox="1142 465 1481 495">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 501 794 530">Tutorial exam</td> <td data-bbox="799 501 1137 530">60.0%</td> <td data-bbox="1142 501 1481 530">33.0%</td> </tr> <tr> <td data-bbox="456 537 794 566">Written exam</td> <td data-bbox="799 537 1137 566">60.0%</td> <td data-bbox="1142 537 1481 566">33.0%</td> </tr> <tr> <td data-bbox="456 573 794 602">Tutorial exam</td> <td data-bbox="799 573 1137 602">60.0%</td> <td data-bbox="1142 573 1481 602">34.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Tutorial exam	60.0%	33.0%	Written exam	60.0%	33.0%	Tutorial exam	60.0%	34.0%
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Recommended reading	Basic literature	<ul style="list-style-type: none"> • Kot, S.M., Sokołowski, A., Jakubowski, J., "Statystyka", Difin, Warszawa 2011. • Kukuła, K., "Elementy statystyki w zadaniach", PWN, Warszawa 2011. • Piłatowska, M., "Reptytorium ze statystyki", PWN, Warszawa 2007. • S. Suchecka J. (red.), "Statystyka przestrzenna. Metody analiz struktur przestrzennych" 													
	Supplementary literature	<ul style="list-style-type: none"> • Sobczyk, M., "Statystyka", PWN, Warszawa 2008. • Sej-Kolasa, M., Zielińska A., "Excel w statystyce. Materiały do ćwiczeń", Wydawnictwo Akademii Ekonomicznej im. O. Langego we Wrocławiu, Wrocław 2004. • Józwik, J., Podgórski J., "Statystyka od postaw", PWE, Warszawa 2000. • Kopczewska K., "Ekonometria i statystyka przestrzenna z wykorzystaniem programu R Cran" 													
	eResources addresses	Adresy na platformie eNauczanie: STATYSTYKA - GP (zima 2022/23) - Moodle ID: 25243 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25243													
Example issues/ example questions/ tasks being completed	<p>Based on the prepared data set calculate and interpret measures of central tendency, diversity, asymmetry and kurtosis.</p> <p>Check whether there is a correlation between variable X and Y.</p> <p>Estimate the multiple regression model for the variable X. Interpret goodness-of-fit measures.</p> <p>Check if variable X is spatially autocorrelated. Justify your answer.</p>														
Work placement	Not applicable														