



Subject card

Subject name and code	STATISTICS , PG_00053791						
Field of study	Management						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2022/2023		
Education level	second-cycle studies	Subject group			Optional subject group 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			English		
Semester of study	1	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Stanisław Kot					
	Teachers	prof. dr hab. Stanisław Kot					
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		8.0		47.0	100
Subject objectives	Acquiring the ability to use statistics to analyze the business and economic phenomena, with the use of IT tools.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_U03] uses mathematical modelling to formulate hypotheses about the behaviour of various subjects and verifies them using advanced statistical and econometric methods	The student uses correct methods in the analysis of statistical data			[SU4] Assessment of ability to use methods and tools		
	[K7_W07] knows in depth selected methods and techniques of data acquisition, enabling analysis and modelling of structures and socio-economic relations, processes taking place and their impact on the implementation of objectives of the organization, including government administration, local government and non-profit organizations	The student knows the selected statistical methods and tools used in making business decisions			[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		

Subject contents	<p>1.Elements of probability. The axioms of the probability theory</p> <p>2. Random variables and their distributions. Discrete and continuous random variables</p> <p>3. Parameters of random variables: expected value, moments</p> <p>4. Selected distributions of random variables (Bernoulli, Poisson, Gaussian)</p> <p>5.The distribution in the sample. Visualisation by histograms</p> <p>6. Measures of statistical location: arithmetic mean, median, quantiles.</p> <p>7. Measures of dispersion (variance, standard deviation, coefficient of variation)</p> <p>8. Measures of skewness and concentration.</p> <p>9.. Measures of economic inequality (Gini, Pietra)</p> <p>10. Two-dimensional random variables; and their parameters. Pearsons coefficients of correlation</p> <p>11. Correlation between qualitative variables. Spearman's coefficient of correlation.</p> <p>12. The regression: function for two variables</p> <p>13. Multivariate regression function</p> <p>14. Statistical indices (aggregate indices price, volume and value. (Laspeyres, Paasche and Fisher)</p> <p>15 . Classical analysis of time series (Census I method).</p>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="453 1352 794 1379">Subject passing criteria</th> <th data-bbox="799 1352 1141 1379">Passing threshold</th> <th data-bbox="1145 1352 1482 1379">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="453 1386 794 1413">Exam</td> <td data-bbox="799 1386 1141 1413">60.0%</td> <td data-bbox="1145 1386 1482 1413">50.0%</td> </tr> <tr> <td data-bbox="453 1420 794 1447">Tests</td> <td data-bbox="799 1420 1141 1447">60.0%</td> <td data-bbox="1145 1420 1482 1447">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Exam	60.0%	50.0%	Tests	60.0%	50.0%
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Example issues/ example questions/ tasks being completed	<p>Compare two groups using descriptive statistics based on the data provided. Interpret the results.</p> <p>In a certain population of men their heights and weights have following characteristics: average height = 68 inches standard deviation = 3 inches average weight = 160 pounds standard deviation = 40 pounds Pearsons correlation = 0.4 Predict the weight of a man when his height is 74 inches.</p>											
Work placement	Not applicable											