

**Subject card**

<b>Subject name and code</b>	Statistics, PG_00195009						
<b>Field of study</b>	Sport Management						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>				2026/2027	
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>				Obligatory subject group in the field of study Subject group related to scientific research in the field of study	
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>				at the university	
<b>Year of study</b>	1	<b>Language of instruction</b>				Polish	
<b>Semester of study</b>	2	<b>ECTS credits</b>				7.0	
<b>Learning profile</b>	academic	<b>Assessment form</b>				exam	
<b>Conducting unit</b>	Department of Statistics -> Faculty of Management -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Sabina Nowak				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	30.0	30.0	15.0	0.0	0.0	75
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	75		2.0		98.0	175
<b>Subject objectives</b>	The student selects the appropriate methodology for examining regularities occurring in mass processes in order to process data and interpret the obtained results.						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>			<b>Method of verification</b>	
	[ZSSML3_W05] Has advanced knowledge and understanding of methods and techniques for obtaining, processing, and using data in decision-making and management processes, especially those undertaken by entities in the sports market.		The student can find and download data from statistical databases such as BDL, Eurostat, and from publications by the Central Statistical Office (GUS). The student classifies statistical measures and methods. The student interprets the results obtained. The student understands situations in which certain statistical measures and methods cannot be applied (e.g., the arithmetic mean, mode, or Pearson's linear correlation coefficient).			[SW4] test/exam - oral or written [SW2] presentation/project/paper/report	
	[ZSSML3_U04] Can correctly select and appropriately apply methods and tools from the fields of management and quality sciences, as well as economics and finance, for decision-making, especially in the sports market.		The student selects appropriate statistical measures/analysis methods depending on the nature of the data and the purpose of the study. The student calculates appropriate statistical measures, indicators, and coefficients (using Excel and dedicated statistical data analysis software).			[SU2] presentation/project/paper/report [SU4] test/exam - oral or written	

Subject contents	<ol style="list-style-type: none"> <li>1. Basic concepts, methods, and applications of statistics. Data presentation: ungrouped and grouped data, tables, graphs.</li> <li>2. Distribution measures: central tendency, dispersion, asymmetry. Classical and positional measures.</li> <li>3. Random variables and selected distributions of random variables.</li> <li>4. Statistical inference: point and interval estimation, hypothesis testing (parametric tests, nonparametric tests).</li> <li>5. Correlation analysis: Pearson's linear correlation coefficient, Spearman's rank correlation coefficient, correlation analysis for qualitative variables, chi-squared independence test.</li> <li>6. Basics of regression analysis: linear regression function and its fitting.</li> <li>7. Time series analysis: measures for mean level, dynamics analysis, linear trend function.</li> </ol>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Tests	51.0%	30.0%
	Project	51.0%	20.0%
	Exam	51.0%	50.0%
Recommended reading	Basic literature	Literatura jest w języku polskim.	
	Supplementary literature	Literatura jest w języku polskim.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. Why should pie charts be avoided?</li> <li>2. What is data grouping?</li> <li>3. What type of feature is the feature "age"?</li> <li>4. How is this feature presented in CSO publications?</li> <li>5. How does CSO collect data on wages in Poland and what type of information can we obtain in this regard on the website <a href="http://www.stat.gov.pl">www.stat.gov.pl</a>. Why should the arithmetic mean not be used for series with strong asymmetry?</li> <li>6. Is it true that in the distribution of income of people, most people earn an income lower than their average level?</li> <li>7. Why is it important to draw a correlation diagram when analyzing the correlation of two quantitative features?</li> <li>8. Conduct a comprehensive analysis of the structure of household income in the Pomeranian Voivodeship in 2019.</li> <li>9. Check whether there is a correlation between gender and consumer behavior. Determine and interpret the measures of birth dynamics in Poland over the years 2010-2024.</li> <li>10. Estimate the regression function. Write the estimated model in the form of an equation. Interpret the structural parameters of the model and evaluate the model fit. Does the estimated model fit the actual data well? Justify.</li> </ol>		
Work placement	Not applicable		

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