

**Subject card**

<b>Subject name and code</b>	Data Management, PG_00177531						
<b>Field of study</b>	Informatics and Econometrics						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Master'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>	1	<b>ECTS credits</b>			6.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>	Department of Statistics -> Faculty of Management -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Arkadiusz Kozłowski				
	<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	0.0	30.0	0.0	0.0	60
	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>	60	4.0	86.0	150		
<b>Subject objectives</b>	The aim of the course is to familiarize students with the R and Python programming languages and to gain knowledge and skills regarding the preparation and initial exploration of statistical data.						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>		<b>Method of verification</b>		
	[liEMU2_U01] The student can creatively and profoundly analyze complex social and economic processes using structured knowledge, econometrics, informatics, or statistics tools.		The student critically evaluates the quality of statistical data and improves its usability.		[SU2] presentation/project/paper/report		
	[liEMU2_W02] The student comprehends advanced theoretical and practical concepts in econometrics, informatics, or statistics, which are essential for a deeper understanding of economic and social phenomena.		The student formulates conclusions from data analysis. Creates reports that summarize large data sets.		[SW2] presentation/project/paper/report		
	[liEMU2_W05] The student possesses advanced knowledge and understanding of informatics, statistics, and econometrics techniques and tools used to acquire, process, or visualise data to aid in decision-making and verify research hypotheses.		The student identifies types of statistical data, recognizes typical problems related to data preparation, such as missing data, outliers.		[SW2] presentation/project/paper/report		
	[liEMU2_U03] The student is able to obtain and verify data from properly selected sources and to collect, process, and visualize it using modern econometrics, informatics or statistics tools.		The student analyzes data from various sources and in different forms. It creates a graphical representation of distributions and relationships between variables.		[SU2] presentation/project/paper/report		

Subject contents	Quality of statistical data		
	R programming language		
	Python programming language		
	Preparing data for analysis		
	Data visualization		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	51.0%	100.0%
Recommended reading	Basic literature	Wilke C.O., <i>Fundamentals of Data Visualization</i> , 2019, <a href="https://clauswilke.com/dataviz/">https://clauswilke.com/dataviz/</a> . Wickham H., Navarro D., Pedersen T.L., <i>ggplot2: Elegant Graphics for Data Analysis</i> (3e), 2025, <a href="https://ggplot2-book.org/">https://ggplot2-book.org/</a> . Venables W. N., Smith D. M., R Core Team, <i>An Introduction to R</i> , cran.r-project.org.	
	Supplementary literature	Pieniążek M., and Zych M., <i>Mapy statystyczne, opracowanie i prezentacja danych</i> , GUS, Warszawa 2017. Rao C.R., <i>Statystyka i prawda</i> , Wydawnictwo Naukowe PWN, Warszawa 1994. Kordos J., <i>Jakość danych statystycznych</i> , PWE, Warszawa 1988.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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