

**Subject card**

<b>Subject name and code</b>	Methods and Tools of Economic System Description, PG_00199183						
<b>Field of study</b>	International Economic Relations						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2027/2028		
<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>	2	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	3	<b>ECTS credits</b>			3.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			exam		
<b>Conducting unit</b>	Department of Logistics -> Faculty of Economics -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Cezary Mańkowski				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	15.0	15.0	0.0	15.0	0.0	45
	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>	45		0.0		30.0	75
<b>Subject objectives</b>	Provide students with methods and tools for describing economic systems						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[MSG3_W10] has an advanced understanding of selected methods and tools, including IT tools and data acquisition techniques, which make it possible to describe and analyse economic entities operating on the international market; knows the processes and phenomena occurring in them and between them, and processes supporting decision-making	The student knows the methods and system description tools economic, including technology enabling data acquisition describe phenomena, processes, business entities operating on the international market	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[MSG3_U12] can prepare written assignments concerning detailed problems of international economic relations (in connection with the chosen speciality within International Economic Relations), using specialist terminology, theoretical and methodological approaches, principles of collecting data from various sources, their description and interpretation, principles of formulating research theses, drawing conclusions on the basis of scientific literature and factual data, and making international comparisons	The student is able to prepare papers design in Polish and English using specialized terminology (notation)	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[MSG3_U13] can prepare presentations and oral speeches on selected specific problems concerning international economic relations (in connection with the chosen speciality within International Economic Relations), using theoretical approaches, specialist terminology, principles of collecting data from various sources, their description and interpretation, and drawing conclusions based on scientific literature	The student has the skill preparing presentations of oral speeches in Polish and English in the form of verbal and graphic descriptions of international economic systems using specialized terminology	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[MSG3_U10] can take an active part in a debate, presenting his/her own viewpoint and supporting it with argumentation based on selected theories, opinions of various authors and/or statistical data	The student is able to discuss and present his own position, arguing theoretically and practically	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[MSG3_U08] uses methods and computer programmes as well as marketing techniques and tools to acquire and analyse data necessary in his/her professional work to diagnose economic processes and make adequate economic decisions	The student uses basic methods and computer tools to describe economic systems for diagnostic and decision-making purposes. If necessary, the student consults them with the lecturer.	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[MSG3_U02] can assess economic and social phenomena occurring in an open economy, interpret necessary statistical data and economic indicators, as well as forecast economic phenomena and processes, using standard methods and tools applied in economic sciences	The student can use methods and system description tools for assessment of economic and social events taking place in an open economy	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[MSG3_K05] correctly identifies, diagnoses and solves dilemmas and various options of solutions related to the profession	The student correctly identifies, diagnoses and resolves dilemmas and various variants of solutions related to the performance of the profession specialist in international economic relations	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written

Subject contents	<p><b>1. The economic system as a subject of description</b>  Ontology (reism, eventualism, processism, relationism, systemism), elements of the economic system (resources, events, processes, relationships), economic system as a holon, features (properties, variables) economic system, measures of the characteristics of the economic system, methods and tools of ontological description economic systems</p> <p><b>2. Tabular and graphical presentation of data Statistical inference and descriptive statistics</b>  Presentation of tools used for description statistical, including IT tools (Microsoft Excel, Statistica). Enumeration series unordered, ordered enumerating series, point and interval distribution series, diagram, histogram, frequency polygon, abundance curve, abundance and share pie chart percentages, bar chart</p> <p><b>3. Basic measures for describing the economic system</b>  Measures of central tendency, measures of: diversity, skewness, concentration</p> <p><b>4. Study of the interdependence of the features of the economic system</b>  Correlation analysis, regression analysis</p> <p><b>5. Studying the dynamics of economic phenomena</b>  The essence of a time series, absolute and relative increments, indexes, time series decomposition</p> <p><b>Subject no. 1 will be implemented during training classes using the ARIS Express tool.</b></p> <p><b>Subjects no. 2-5 will be covered during training classes using a Microsoft tool Excel and the Statistica package (beginner level)</b></p>											
Prerequisites and co-requisites	Knowledge and skills acquired as a result of completing the subjects: Application of mathematics in economics and management, Information technologies, Macroeconomics I, Microeconomics I, Management											
Assessment methods and criteria	<table border="1" data-bbox="448 786 1487 936"> <thead> <tr> <th data-bbox="448 786 794 819">Subject passing criteria</th> <th data-bbox="794 786 1141 819">Passing threshold</th> <th data-bbox="1141 786 1487 819">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 819 794 853">written test</td> <td data-bbox="794 819 1141 853">51.0%</td> <td data-bbox="1141 819 1487 853">100.0%</td> </tr> <tr> <td data-bbox="448 853 794 936">active participation in classes (possibility of obtaining additional points)</td> <td data-bbox="794 853 1141 936">0.0%</td> <td data-bbox="1141 853 1487 936">0.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	written test	51.0%	100.0%	active participation in classes (possibility of obtaining additional points)	0.0%	0.0%
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Recommended reading	Basic literature	<p>1. W. Makać, D. Urbanek-Krzysztofak: Metody opisu statystycznego. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk, 2020</p> <p>2. C. Mańkowski: Modelowanie procesów logistycznych. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2020 (do pobrania tutaj/zakładka TREŚĆ)</p> <p>3. L. Reszka: Decyzje menedżerskie w logistyce. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2019 (do pobrania tutaj/zakładka TREŚĆ)</p> <p>4. Educational Portal: <a href="http://www.ariscommunity.com">www.ariscommunity.com</a></p>										

	Supplementary literature	<p>1. C. Mańkowski: Ontological Foundations for Business Logistic Process Modeling. "Railway Transport and Logistics" 2007, no. 2, p. 30-38</p> <p>2. A. Wojna: Wykłady z podstaw statystyki. Cz. 1, Opis statystyczny. Wydawnictwo Uczelniane Politechniki Koszalińskiej, Koszalin 2011</p> <p>3. B. Pułaska - Turyna: Statystyka dla ekonomistów. Wydawnictwo Difin, Warszawa 2011</p> <p>4. J. Józwiak, J. Podgórski: Statystyka od podstaw. Polskie Wydawnictwo Ekonomiczne, Warszawa 2012</p> <p>5. A. Maksymowicz-Ajchel: Wstęp do statystyki. Metody opisu statystycznego. Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2020</p> <p>6. M. Kowalski: Podstawy statystyki opisowej dla ekonomistów. Wydawnictwo Wyższej Szkoły Bankowej, Poznań - Chorzów 2006</p>
Example issues/ example questions/ tasks being completed	eResources addresses	<p>Identification of the basic components of the described economic system</p> <p>The use of text and numerical variables in the description of economic systems</p> <p>Calculation and interpretation of measures of statistical description for a given economic system</p>
Work placement	Not applicable	

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