University of Gdańsk

Subject card

Subject name and code	Methods and Tools of Economic System Description, PG_00169902		
Field of study	Economics		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2026/2027
Education level	Bachelor's 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	2.0
Learning profile	academic	Assessment form	
Conducting unit	Department of Logistics -> Faculty of Economics -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Cezary Mańkowski	
	Teachers	dr hab. Cezary Mańkowski dr Beata Chmiel	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15	5.0	30.0	50

Subject objectives	To introduce students to methods and tools for describing economic systems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[EKONL3_U10] has the ability to prepare oral presentations, in Polish and in a foreign language, on economic and social issues, using specialist terminology, theoretical approaches, principles of collecting various sources of data, their description and interpretation, and making inferences from scientific literature, and is able to take an active part in a debate	The student has the ability to prepare oral presentations in the form of a verbal description of economic systems using specialist terminology	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_U09] is able to prepare written work, in Polish and in a foreign language, on specific economic and social issues, using specialist terminology, theoretical and methodological approaches, principles of collecting data from various sources, their description and interpretation, making inferences based on scientific literature and factual data, and making international comparisons	The student is able to prepare project works in the adopted language (notation) of description of economic systems using the professional termnology.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_W06] have an advanced knowledge of selected methods and tools, including statistical and econometric techniques, for describing economic agents and structures as well as social institutions and the processes taking place in them	The student knows methods and tools appropriate to the academic discipline of economics for describing economic systems, including data acquisition techniques that make it possible to describe economic phenomena, processes, entities, structures and institutions.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[EKONL3_U04] can predict and forecast the course of economic and social processes and phenomena	The student is able to predict the course of economic and social processes and phenomena and to forecast them using various methods, including statistical ones.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_U02] is able to use the knowledge of theory and data to analyse concrete economic and social processes and phenomena and to analyse these phenomena using methods developed in economics, finance and management sciences	The student is able, on the basis of methods and tools of economic systems description, to use basic theoretical knowledge and acquire data to analyse concrete economic processes and phenomena in the field of economic systems description.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[EKONL3_K05] correctly identifies, diagnoses and resolves professional dilemmas and different options for solutions	The student correctly identifies, diagnoses and resolves dilemmas and different options for solutions related to the economics profession	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK4] test/exam - oral or written [SK8] observation of student's independent or team work
[EKONL3_U07] is able to participate in analyses and evaluations of alternative solutions to economic and social problems and to choose the methods and instruments to resolve them rationally	The student is able to participate in analyses and evaluations of alternative solutions to economic and social problems and to select methods and instruments, including statistical ones, to solve them rationally.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU8] observation of student's independent or team work

Subject contents	**1. The economic system as an object of description** Ontology (realism, evidentialism, processualism, relationalism, systemism), elements of the economic system (resources, events, processes, relations), the economic system as a holon, characteristics (properties, variables) of the economic system, measures of characteristics of the economic system, methods and tools of ontological description of economic systems **2..Tabular and graphical presentation of data** Statistical inference vs. descriptive statistics. Presentation of tools used for statistical description, including IT tools (Microsoft Excel, Statistica). Unordered enumeration series, ordered enumeration series, point and interval series, diagram, histogram, frequency polygon, abundance curve, pie chart of abundance and percentages, bar chart **3. Basic measures for describing an economic system** Measures of central tendency, measures of: diversity, skewness, concentration **4. Analysis of interdependence of economic system characteristics** Correlation analysis, regression analysis **5. Analysis of the dynamics of economic phenomena** The essence of time series, absolute and relative growth, indices, time series decomposition Topic no. 1 will be realised in class using the ARIS Express tool. Topics 2 to 5 will be covered in class using Microsoft Excel and Statistica (beginner level). In order to deepen the concepts discussed during lectures, students have the opportunity to participate in consultations
Prerequisites and co-requisites	Knowledge and skills acquired as a result of the subjects: • Application of mathematics in economics and management, • Information technology, • Macroeconomics I, • Microeconomics I, • Management
Assessment methods and criteria	<table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>written test</td><td>51.0%</td><td>100.0%</td></tr><tr><td>Active participation in classes (possibility of additional points)</td><td>0.0%</td><td>0.0%</td></tr></table>
Recommended reading	Basic literature 1. W. Makać, D. Urbanek-Krzysztofiak: *Metody opisu statystycznego*. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk, 2020 2. C. Mańkowski: Modelowanie procesów logistycznych. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2020 (do pobrania tutaj/zakładka TREŚĆ) 3. L. Reszka: *Decyzje menedżerskie w logistyce*. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2019 (do pobrania tutaj/ zakładka TREŚĆ) 4. Portal edukacyjny www.ariscommunity.com

	Supplementary literature	1. C. Mańkowski: Ontological Foundations for Business Logistic Process Modeling. "Railway Transport and Logistics" 2007, no. 2, p. 30-38 2. A. Wojna: *Wykłady z podstaw statystyki. Cz. 1, Opis statystyczny*. Wydawnictwo Uczelniane Politechniki Koszalińskiej, Koszalin 2011 3. B. Pułaska - Turyna: *Statystyka dla ekonomistów*. Wydawnictwo Difin, Warszawa 2011 4. J. Jóźwiak, J. Podgórski: *Statystyka od podstaw*. Polskie Wydawnictwo Ekonomiczne, Warszawa 2012 5. A. Maksymowicz-Ajchel: *Wstęp do statystyki. Metody opisu statystycznego*. Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2020 6. M. Kowalski: *Podstawy statystyki opisowej dla ekonomistów*. Wydawnictwo Wyższej Szkoły Bankowej, Poznań - Chorzów 2006
	eResources addresses	
Example issues/ example questions/ tasks being completed	-	
Work placement	Not applicable	

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