



Subject card

Subject name and code	MODELING OF SUSTAINABLE DEVELOPMENT, PG_00058527						
Field of study	MODELOWANIE ZRÓWNOWAŻONEGO ROZWOJU						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2025/2026		
Education level	first-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	3	Language of instruction			English		
Semester of study	5	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Statistics and Econometrics -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Marta Kuc-Czarnecka				
	Teachers		dr hab. Marta Kuc-Czarnecka				
Lesson types	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						
	eNauczenie source address: https://enauczenie.pg.edu.pl/moodle/course/view.php?id=46147 Moodle ID: 46147 Modelowanie zrównoważonego rozwoju 2025 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=46147						
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	5.0	50.0	100		
Subject objectives	preparing students to accurately select quantitative methods and obtain reliable data for conducting analyses in the field of sustainable development						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W03] identifies reliable sources of information relevant to the analyzed issues.	knows and understands methods for identifying reliable information sources in the context of data collection for sustainable development modeling			[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym		
	[K6_U06] acquires new knowledge by planning lifelong learning strategies.	is able to acquire new knowledge necessary for the quantitative analysis of sustainable development by using self-learning methods and data analysis techniques			[SU2] Ocena umiejętności analizy informacji [SU4] Ocena umiejętności korzystania z metod i narzędzi		
Subject contents	Course content – lecture Sustainable development as an example of a multidimensional phenomenon. Selection of indicators of sustainable development. Composite indicator of sustainable development - stimulation and normalization of variables. Composite indicator of sustainable development - aggregation and weighting of variables. Sensitivity analysis of the composite indicator of sustainable development. Linear ordering of countries according to the degree of achievement of the SDGs. Grouping countries according to the degree of achievement of the SDGs - taxonomic analyzes. Social convergence in the context of sustainable development Upward convergence in monitoring the achievement of the SDGs. The spatial taxonomic measure of sustainable development. Soft modelling of sustainable development.						
Prerequisites and co-requisites	basic statistical and econometric skills						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Oral exam	60.0%	50.0%
	Group project	60.0%	50.0%
Recommended reading	Basic literature	Perło, D. (2014). Modelowanie zrównoważonego rozwoju. Białystok: Wydawnictwo Uniwersyteckie Trans Humana. Panek, T., Zwierzchowski, J. (2013). Statystyczne metody wielowymiarowej analizy porównawczej. Teoria i zastosowania, Warszawa: Oficyna Wydawnicza SGH. Młodak, A. (2006). Statystyczna analiza wielowymiarowa w statystyce regionalnej, Warszawa: Difin.	
	Supplementary literature	OECD (2008). Handbook on Constructing Composite Indicators. Methodology and User Guide. Paris: OECD Publications.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Construct a composite indicator for the 7 th sustainable development goal. Prepare a linear ordering and group the European Union countries in terms of achieving this goal. Assess the convergence trends in the implementation of the seventh SDG.		
Practical activities within the subject	Not applicable		

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