GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	APPLICATION OF ECONOMETRIC METHODS IN MANAGEMENT, PG_00060948		
Field of study	Management		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2024/2025
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Katedra Statystyki i Ekonometrii -> Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Agnieszka Wałachowska	
	Teachers		

Lesson types and methods of instruction

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

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	25.0	75

Subject objectives

Models phenomena in the field of management and economics using in-depth econometric methods

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W03] demonstrates in-depth preparation in the application of management methods and techniques for formulating and solving management problems	uses econometric models to solve complex management and economic problems, based on reliable sources of information	[SW1] Assessment of factual knowledge
[K7_U03] formulates research problems and selects appropriate research methods for their effective solution, using advanced IT tools, and evaluates the obtained results critically	formulates hypotheses and verifies them using advanced econometric models, using IT tools	[SU4] Assessment of ability to use methods and tools

Subject contents

Econometric model - concept, elements and interpretation
Classification of econometric models
Simple and Multiple Regression Model Estimation Problems - Least Squares Method (LSM)
Verification of the estimated form of the model - a measure of the quality of fit
Stochastic verification of the estimated form of the model - standard error of estimators and testing the significance of parameters
Autocorrelation - causes and testing
The concept of conditional econometric forecast
Multiplicative models - problems of estimation and interpretation
Simple methods of time series analysis - development trend models
Cause and effect dynamic models - problems of interpretation
Cause and effect models of production and work efficiency
Cause and effect model of labor demand
Cause and effect wage model
The cause and effect model of inflation

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test I and II	60.0%	50.0%
Lecture test	60.0%	50.0%

Recommended reading	Basic literature	1. Maddala G.S.: Ekonometria, Wydawnictwo Naukowe PWN, Warszawa 2024 2. Borkowski B., Dudek H., Szczesny W., Ekonometria Wybrane zagadnienia, PWN, Warszawa 2021 3. Kufel T., Ekonometria. Rozwiązywanie problemów z wykorzystaniem programu GRETL, PWN, Warszawa 2022 4. Kukuła K., Wprowadzenie do ekonometrii, PWN, Warszawa 2023
	Supplementary literature	1. Welfe A., Ekonometria. Metody i ich zastosowanie, PWE Warszawa 2016 2. Witkowska D., Podstawy ekonometrii i teorii prognozowania, Kraków 2012 3. Gruszczyński M., Podgórska M., Ekonometria, Warszawa 2004 4. Bernardelii M., Decewicz A., Tomczyk E., Ekonometria i badania operacyjne. Zbiór zadań, PWN Warszawa 2021 5. Hill R., Griffiths W., Lim G., Principles of Econometrics, Wiley 2018
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Rozważ przyczynowo-skutkowy model płac: **lnWt = 1,8 +0,7 lnAPLt - 0,15 ln URt-1** gdzie: **Wt** - realna płaca w okresie **t**, **APLt** przeciętna produktywność pracy, **URt** stopa bezrobocia na koniec okresu **t** (w %) 1 Dokonując antylogarytmowania sprowadź model do postaci pierwotnej:..... 2. Zdefiniuj i zinterpretuj elastyczność płacy (**W**) ze względu na wydajność pracy (**APL**)..... 3. Zdefiniuj i zinterpretuj elastyczność płacy (**W**) ze względu na stopę bezrobocia (**UR**):.....	
Work placement	Not applicable	

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