



Subject card

Subject name and code	Applications of Econometric Methods in Management, PG_00067671						
Field of study	Management						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2026/2027	
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	2	ECTS credits				3.0	
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 inż. Agnieszka Wałachowska				
	Teachers		dr inż. Agnieszka Wałachowska				
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						
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		7.0		23.0	75
Subject objectives	Preparing students for modeling and analyzing economic phenomena and management processes using econometric methods and IT tools, as well as fostering attitudes related to critical evaluation of results and responsible decision-making in the context of solving complex management problems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U03] formulates research hypotheses and select appropriate methods for their verification using advanced it tools.		Is able to formulate research hypotheses and verify them using econometric models, employing advanced IT tools and critically evaluating the obtained results.		[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools		
	[K7_W03] demonstrates in-depth knowledge of the applications of analytical methods and techniques for formulating and solving problems.		Knows and understands econometric methods in the context of solving complex management and economic problems, and is able to indicate the principles of their practical application based on reliable sources of information.		[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	<p>Course content – lecture</p> <p>Econometric model - concept, elements and interpretation</p> <p>Classification of econometric models</p> <p>Simple and Multiple Regression Model Estimation Problems - Least Squares Method (LSM)</p> <p>Verification of the estimated form of the model - a measure of the quality of fit</p> <p>Stochastic verification of the estimated form of the model - standard error of estimators and testing the significance of parameters</p> <p>Autocorrelation - causes and testing</p> <p>The concept of conditional econometric forecast</p> <p>Multiplicative models - problems of estimation and interpretation</p> <p>Simple methods of time series analysis - development trend models</p> <p>Cause and effect dynamic models - problems of interpretation</p> <p>Cause and effect models of production and work efficiency</p> <p>Cause and effect model of labor demand</p> <p>Cause and effect wage model</p> <p>The cause and effect model of inflation</p> <p>Course content – laboratory</p> <p>The topics covered in the lecture will be discussed in laboratory classes in the form of practical exercises, enabling the direct application of the acquired knowledge.</p>						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Problem-based test	60.0%	30.0%
	Computational tasks (test)	60.0%	35.0%
	Project	60.0%	35.0%
Recommended reading	Basic literature	1. Maddala G.S.: Ekonometria, Wydawnictwo Naukowe PWN, Warszawa 2013 2. Borkowski B., Dudek H., Szczesny W., Ekonometria Wybrane zagadnienia, PWN, Warszawa 2004 3. Kufel T., Ekonometria. Rozwiązywanie problemów z wykorzystaniem programu GRETL, PWN, Warszawa 2013	
	Supplementary literature	1. Welfe A., Ekonometria. Metody i ich zastosowanie, PWE Warszawa 1995 2. Witkowska D., Podstawy ekonometrii i teorii prognozowania, Kraków 2005 3. Gruszczynski M., Podgórska M., Ekonometria, Warszawa 2004 4. Hill R., Griffiths W., Lim G., Principles of Econometrics, Wiley 2018	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Rozważ przyczynowo-skutkowy model płac: $\ln W_t = 1,8 + 0,7 \ln APL_t - 0,15 \ln UR_t - 1$ gdzie: $W_t$ - realna płaca w okresie $t$ , $APL_t$ przeciętna produktywność pracy, $UR_t$ stopa bezrobocia na koniec okresu $t$ (w %)		
Practical activities within the subject	Not applicable		

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