GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	FINANCIAL ECONOMETRICS, PG_00060808					
Field of study	Economic Analytics					
Date of commencement of studies	October 2023		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	blended-learning		
Year of study	2		Language of instruction	English		
Semester of study	3		ECTS credits	4.0		
Learning profile	general academic profile		Assessment form	exam		
Conducting unit	Katedra Statystyki i Ekonometrii -> Faculty of Management and Economics					
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Michał Pietrzak			
	Teachers		Andrzej Geise			

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	0.0	0.0	60
	E-learning hours included: 30.0						

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	60	4.0	36.0	100

Subject objectives	Formulates complex models of the capital market stochastic processes using in-depth knowledge and problem solving techniques, in accordance with contemporary trends in the development of this research area

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_W02] explains the meaning and interdependence of the key components describing economic processes, using in-depth knowledge consistent with the main trends in the development of scientific disciplines related to the field of study	analyzes stochastic processes in the financial market, interpreting their key components and their relationships, using modern scientific achievements	[SW1] Assessment of factual knowledge
	[K7_U03] formulates research problems and selects appropriate analytical methods for their effective solution, using advanced IT tools, and evaluates the results critically	models stochastic processes in the capital market, selecting analytical methods and financial data appropriate to the formulated research problem	[SU3] Assessment of ability to use knowledge gained from the subject

Subject contents	Stochastic processes in the financial market, basic characteristics, empirical examples
	The process of obtaining financial data by institutions, sources of data acquisition, institutional limitations
	The problem of sharing and distributing financial data by institutions, availability of financial data
	Deterministic trend or stochastic trend - stationarity and unit root tests
	Modeling stationary stochastic processes of the financial market
	Modeling of non-stationary stochastic processes of the financial market
	One-equation error correction model, cointegration modeling of stochastic processes
	One-dimensional volatility models, models from the GARCH family, stochastic volatility (SV) models
	Multi-equation models of stochastic VAR and SVAR processes in financial markets
	Study of cointegration of stochastic processes
	VECM error correction vector model
	The problem of Granger causality
	Multi-equation volatility models from the GARCH family
	The problem of contagion in financial markets

Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	60.0%	40.0%
	Exam	60.0%	60.0%

Recommended reading	Basic literature	Osińska M. (2006) Ekonometria finansowa, Warszawa, PWE Doman M., Doman R. (2009) Modelowanie zmienności I ryzyka. Metody ekonometrii finansowej. Oficyna Wolters Kluwer, Kraków
	Supplementary literature	Enders W. (1995) Applied Econometric Time Series. Wiley Maddala G.S.(2006) Ekonometria, PWN, Warszawa
	eResources addresses	Adresy na platformie eNauczanie: Financial Econometrics - Moodle ID: 40029 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=40029

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable

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