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Subject card

Subject name and code	FINANCIAL ECONOMETRICS, PG_00066463					
Field of study	Economic Analytics					
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026	
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	2		Language of instruction		English	
Semester of study	3		ECTS credits		3.0	
Learning profile	general academic profile		Assessment form		exam	
Conducting unit	Department of Statistics and Econometrics -> Faculty of Management and Economics					
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Michał Pietrzak			
	Teachers		dr hab. Michał Pietrzak			

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: 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	60	4.0	11.0	75

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_U03] Formulates research hypotheses and selects appropriate analytical methods for their verification, utilizing advanced IT tools, and critically evaluates the obtained results.	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
	[K7_W02] Understands the significance and interrelationships of key components describing economic processes, drawing on in-depth knowledge aligned with major developmental trends in scientific disciplines related to the field of economic analytics.	analyzes stochastic processes in the financial market, interpreting their key components and their relationships, using modern scientific achievements	[SW1] Assessment of factual knowledge

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:

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

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