GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	FINANCIAL ECONOMETRICS, PG_00066557		
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	Polish
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	5.0	25.0	90

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	[SU4] Assessment of ability to use methods and tools
[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		

Document generated electronically. Does not require a seal or signature.