

Subject card

Subject name and code	Quantitative Methods for Finance, PG_00124889						
Field of study	Finance and Accounting						
Date of commencement of studies	October 2024		Academic year of realisation of subject			2024/2025	
Education level	postgraduate 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			English	
Semester of study	1		ECTS credits			8.0	
Learning profile	academic		Assessment form				
Conducting unit	Katedra Ekonometrii -> Faculty of Management						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Anna Zamojska				
	Teachers		dr hab. Anna Zamojska				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	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		30.0		110.0	200
Subject objectives	The aim of the course is to provide students with an understanding and basic skills to use quantitative methods for finance and investment. Students develop the ability to formulate problems into quantitative models, to aid the successful resolution of the problem. Students learn how to apply statistical methods to analyse past data and infer future trends. Using output from mathematical and statistical models, students learn to analyse, interpret and conclude from quantitative information.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[FiRMU2_W05] The student has an extended knowledge of advanced methods and tools, including data acquisition and analysis techniques, specific to the social sciences to describe economic structures and institutions and the processes within and between them.	The student has an extended knowledge of advanced methods and tools of quantitative data analysis, including data acquisition and processing techniques, in the scope of the course.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report
	[FiRMU2_W09] The student knows and understands grammatical structures and vocabulary thoroughly within his/her specialty in a foreign language at B2+ level.	Extended grammar and vocabulary information for quantitative methods in finance.	[SW1] oral statement/conversation/discussion [SW3] text preparation/written work
	[FiRMU2_U04] The student can forecast and model complex economic processes and phenomena in finance and accounting using advanced methods and tools appropriate to the science of finance.	The student is able to independently propose, estimate and verify a quantitative model describing a selected financial phenomenon.	[SU5] implementation of a problem task
	[FiRMU2_K06] Creativity: - the student has the ability to think creatively, can go beyond the usual patterns, - can think and act in an entrepreneurial manner, - can flexibly adapt to the changing requirements of the environment.	Student experiments and looks for alternative approaches in the analysis of capital market equilibrium models and corporate valuation.	[SK2] presentation/project/paper/report [SK6] demonstration of practical skills
	[FiRMU2_U03] The student can analyse in depth the causes, course and effects of processes and phenomena in finance and accounting using advanced theories and appropriate social sciences methods. Can verify simple research hypotheses. Can collect data using information technology.	Student can demonstrate competency in numeric skills, apply statistical methods to analyse past data and infer future trends, demonstrate an understanding of appropriate application of quantitative techniques to a range of problems in the finance, recognise limitations of the quantitative models.	[SU2] presentation/project/paper/report [SU3] text preparation/written work
	[FiRMU2_K02] Cooperation: - the student can harmoniously interact and work in a group, assuming various roles in the group, including leadership and supervision of the group, - can agree with the group on goals and division of tasks, - is open-minded, respecting the differences of other team members.	Student acts as a team player or team leader to complete classroom activities or course project. Moderates and participates in discussions, expresses own opinions and constructive criticism about projects of peer students.	[SK1] oral statement/conversation/discussion [SK6] demonstration of practical skills
	[FiRMU2_U09] The student can use a foreign language at the B2+ level of proficiency of the Common European Framework of Reference for Languages and specialized terminology. The student has an in-depth ability to prepare written works, oral speeches and presentations in a modern foreign language on specific issues in his/her specialty, using basic theoretical approaches and various sources of information.	A student in a foreign language is able to use specialist terminology in his/her statements and written works in the field of quantitative methods in finance.	[SU2] presentation/project/paper/report [SU3] text preparation/written work
Subject contents	<ol style="list-style-type: none"> 1. Analysis and illustration of stylized facts of the assets rates of return 2. Estimation of selected capital asset pricing models 3. Methods of verification of estimated valuation models Event analysis 4. Forecasting rates of return of financial instruments 5. Modeling of extreme values of rates of return 6. Multivariate models in risk and rate of return analysis 		
Prerequisites and co-requisites	Descriptive statistics, inferential statistics and introduction to the econometrics		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written exam with multiple choice	51.0%	40.0%
	project developed in class and at home with presentation	51.0%	60.0%

Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. Maggin J.L., Tuttle D.L., McLeavey D.W., and Pinto J.E., Managing Investment Portfolio. A Dynamic Process, John Wiley & Sons, 2007. 2. Mills T.C., Markellos R.N., The Econometric Modelling of Financial Time Series, Cambridge University Press, 2008.
	Supplementary literature	<ol style="list-style-type: none"> 1. Brooks C., Introductory Econometrics for Finance, Cambridge University Press, 2008. 2. Carol A., Market Risk Analysis: Quantitative Methods in Finance, John Wiley & Sons, 2008.
	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.