

Subject card

Subject name and code	Financial Mathematics, PG_00156960						
Field of study	Finance and Accounting						
Date of commencement of studies	October 2024		Academic year of realisation of subject			2024/2025	
Education level	undergraduate 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	2		ECTS credits			5.0	
Learning profile	academic		Assessment form				
Conducting unit	Katedra Inwestycji i Nieruchomości -> Faculty of Management						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Anna Wojewnik-Filipkowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	30.0	0.0	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		19.0		61.0	125
Subject objectives	Introduction to basic rights and principles of financial mathematics essential financial analyst work.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[FiRL3_K01] Self-development: - understands the need for development and lifelong learning - is able to supplement and improve the acquired knowledge and skills - knows his strengths and weaknesses, sets ambitious goals to the best of his ability - knows how to accept failure and admit mistakes.	Understands the need for lifelong learning and development relating financial mathematics - is capable of enhancing and refining acquired knowledge and skills - is aware of their strengths and weaknesses, setting ambitious but achievable goals - can accept failure and admit mistakes.	[SK2] presentation/project/paper/report [SK4] test/exam - oral or written
	[FiRL3_K03] Communication: - is able to present his view, issue in a way that others can understand - boldly (but thoughtfully) expresses his opinion, is not afraid to ask questions - is able to culturally participate in discussions - is able to give constructive criticism.	Can clearly convey opinions and present topics relating financial mathematics in an understandable way - confidently, but thoughtfully, expresses their views and is not afraid to ask questions - can participate in discussions politely - is capable of offering constructive criticism.	[SK2] presentation/project/paper/report [SK4] test/exam - oral or written
	[FiRL3_W06] The student has advanced knowledge of methods and tools, including data acquisition and analysis techniques, appropriate to management science and quality, which allow describing economic structures and institutions and the processes within and between them.	Is capable of applying advanced methods and tools, including data acquisition and analysis techniques appropriate for financial mathematics, allowing for the description of economic structures and institutions, as well as the processes occurring within and between them.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report
	[FiRL3_K02] Cooperation: - can harmoniously interact and work in a group, taking on different roles in it - is able to agree with the group on goals and division of tasks - is open-minded and respects the differences of other team members.	Can effectively cooperate and work within a group over topics relating financial mathematics, taking on various roles - is able to agree on goals and task distribution with the team - is open-minded and respects the diversity of other team members.	[SK2] presentation/project/paper/report [SK4] test/exam - oral or written
	[FiRL3_U04] The student can forecast economic processes and phenomena in finance and accounting using advanced methods and tools.	Is capable of forecasting economic processes and phenomena in finance and accounting using advanced methods and tools of financial mathematics.	[SU2] presentation/project/paper/report [SU4] test/exam - oral or written
Subject contents	Interest rates. Simple interest rates. Present value of a single future payment. Discount factors. Effective and nominal interest rates. Real and money interest rates. Compound interest rates. Relation between the time periods for compound interest rates and the discount factor. Annuities and perpetuities. Dent repayment schedules. Introduction to fixed-income instruments. Generalized cashflow model. Net present value of a sequence of cashflows. Internal rate of return. Investment project appraisal. Examples of cashflow patterns and their present values. Elementary compound interest problems.		
Prerequisites and co-requisites	Subjects according to the education cycle.The student knows the basic categories in the field of finance according to the education cycle.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test/exam - oral or written	51.0%	20.0%
	test/exam - oral or written	51.0%	20.0%
	implementation of a problem task	51.0%	10.0%
	test/exam - oral or written	51.0%	50.0%
Recommended reading	Basic literature	Hastings J. K., Introduction to financial mathematics, A Chapman and Hall Book, 2015. Time vaule of money, Discounted cash flow application, Introduction to Fixed-Income valuation - CFA Programm Circullum Level I, Volumes 1-6 Willey, CFA Institute, 2019 (and later)	
	Supplementary literature	John McCutcheon and William F. Scott, An Introduction to the Mathematics of Finance, Elsevier Butterworth-Heinemann, 1986. ISBN 0-7506-0092-6.	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			

Work placement	Not applicable
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