

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	FINANCIAL MATHEMATICS, PG_00061176								
Field of study	Management								
Date of commencement of studies	October 2025		Academic year of realisation of subject			2026/2027			
Education level	evel first-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			assessment			
Conducting unit	Department Of Finance -> Faculty Of Management And Economics -> Wydziały Politechniki Gdańskie				ańskiej				
Name and surname	Subject supervisor		dr Piotr Kasprzak						
of lecturer (lecturers)	Teachers								
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	0.0	30.0	0.0	0.0		0.0	30	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	tivity Participation in didactic classes included in stu plan		Participation in consultation hours		Self-study SUM			
	Jumber of study 30 Jours			5.0		40.0 75		75	
Subject objectives	Identifies concepts and mathematical tools used in finance and banking								
Learning outcomes	Course out	Subject outcome			Method of verification				
	[K6_U04] formulates logical solutions to complex or unstructured problems		analyzes the impact of various factors influencing the studied phenomenon, striving to obtain an optimal solution			[SU2] Assessment of ability to analyse information			
	[K6_W02] demonstrates comprehensive preparation in terms of methods, techniques for formulating and solving problems		selects appropriate mathematical methods and techniques to analyze financial problems			[SW1] Assessment of factual knowledge			
Subject contents	Time value of money introduction Simple interest, discount rate, compound interest, continuous capitalization Nominal, equivalent, effective and average interest rate Inflation rate and real interest rate Valuation of short-term debt securities (bills and other debt securities Models of installments payable in arrears and in advance Perpetual installment Models of equal installments with capitalization more frequent and less frequent than installments Models of installments increasing according to arithmetic and geometric progression Debt repayment Ratios in credit assessment Investment profitability analysis Valuation of long-term debt securities Introduction to the valuation of derivatives The use of a spreadsheet in financial mathematics								
Prerequisites and co-requisites									
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade				
	Final test		60.0%		20.0%				
	Tests during the semester		60.0%			80.0%			

Recommended reading	Basic literature	 A. Pascucci, W. J. RunggaldierFinancial Mathematics: Theory and Problems for Multi-period Models (UNITEXT) 2012th Edition, Springer 2012 S. Chandra, S. Dharmaraja, Aparna Mehra, R. Khemchandani, Financial Mathematics: An Introduction 1st Edition, Alpha Science International, 2013 D.G. Saari, Mathematics of Finance: An Intuitive Introduction (Undergraduate Texts in Mathematics) 1st ed. 2019 Edition, Springer, 2019 M. B. Miller, Mathematics and Statistics for Financial Risk Management 2nd Edition, Wiley Finance Series, 2018 			
	Supplementary literature	D.R. Chambers, Q. Lu, Introduction to Financial Mathematics With Computer Applications, Chapman and Hall/CRC, 2021 K. J. Hastings, Introduction to Financial Mathematic, Chapman and Hall/CRC, 2015			
	eResources addresses	Adresy na platformie eNauczanie:			
Example issues/ example questions/ tasks being completed	Calculation of the future value of deposits, loan installments, and the expected size of a pension				
Work placement	Not applicable				

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