GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Financial Mathematics, PG_00044439
Field of study	Engineering Management

Date of commencement of studies	October 2021	Academic year of realisation of subject	2022/2023
Education level	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	Part-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment

Conducting unit	Department of Economic Analysis and Finance -> Faculty of Management and Economics

Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Krystian Zawadzki
	Teachers	dr hab. inż. Krystian Zawadzki

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	16.0	0.0	0.0	0.0	16
	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	16	6.0	53.0	75

Subject objectives	Introducing students to the basic mathematical concepts and tools used in finance and banking.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W11] has the basic knowledge of mathematics, physics and chemistry necessary to solve technical problems	The student perceives the need to expand knowledge and is able to develop it.	[SW1] Assessment of factual knowledge
	[K6_W06] has a basic knowledge of methods and tools for conducting research and analyses related to particular areas of the enterprise's operations and its environment	Student identifies methods of valuing money over time.	[SW1] Assessment of factual knowledge
	[K6_U02] analyses economic problems, including financial ones in various areas of the organisation's functioning, also when formulating and solving engineering tasks	Student solves the financial problems of financial institutions and their clients	[SU1] Assessment of task fulfilment

Subject contents	Time value of money introduction; Simple interest, discount rate, compound interest, continuous compounding; Nominal, equivalent, effective and average rate of interest; Inflation rate and real rate of interest; Valuation of short-term securities (bonds and other securities); Annuity immediate and annuity due ; Perpetuities; Annuities payable more and less frequently than interest is convertible; Payments varying in arithmetic and geometric progression; Repayment of debts analysis Measurement of investment performance; Valuation of long-term securities;
Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Colloquium	60.0%	70.0%
	Entry passing, solving tasks and active participation in classes	60.0%	30.0%

Recommended reading	Basic literature	1. Podgórska M., Klimkowska J., Matematyka finansowa, Wydawnictwo Naukowe PWN, Warszawa 2005. 2. Sobczyk M., Matematyka finansowa: podstawy teoretyczne, przykłady, zadania, Agencja Wydawnicza Placet, Warszawa 2006.
	Supplementary literature	1. Bień W., Bień A., Kalkulacja ceny pieniądza w lokatach, pożyczkach i kredytach, Difin, Warszawa 2006. 2. Borowski J., Golański R., Kasprzyk K., Melon L., Pogórska M., Matematyka finansowa: przykłady, zadania, testy, rozwiązania, SGH, Warszawa 2003. 3. Kellison S. G., The Theory of Interest, McGraw-Hill, 2008. 4. Matłoka M., Światłowski J., Matematyka finansowa i funkcje finansowe arkusza kalkulacyjnego, Wydawnictwo WSB, Poznań 2003
	eResources addresses	Adresy na platformie eNauczanie: Matematyka finansowa - Moodle ID: 28982 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28982
Example issues/ example questions/ tasks being completed	Calculation of the future value of investments, credit instalments and expected retirement value.	
Work placement	Not applicable	