GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	FINANCIAL MATHEMATICS, PG_00061450
Field of study	Engineering Management

Date of commencement of studies	October 2023	Academic year of realisation of subject	2024/2025
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 (on-line)	Mode of delivery	blended-learning
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	5.0
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 inż. Marcin Potrykus
	Teachers	dr inż. Marcin Potrykus

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	8.0	16.0	0.0	0.0	0.0	24
	E-learning hours included: 18.0						

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	24	7.0	94.0	125

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_U04] formulates logical solutions to complex or unstructured problems	Student solves the financial problems of financial institutions and their clients.	[SU1] Assessment of task fulfilment
	[K6_W02] demonstrates advanced preparation in the methods and techniques of formulating and solving problems	Student identifies methods of valuing money over time. The student perceives the need to expand knowledge and is able to develop it.	[SW1] Assessment of factual knowledge

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). Ordinary Annuity and annuity due. Perpetuities. Annuities payable more and less frequently than interest is convertible. Repayment of debts analysis. 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%	100.0%

| Recommended reading | Basic literature | Podgórska, M., Klimkowska, J. (2022). Matematyka finansowa. Warszawa: Wydawnictwo Naukowe PWN.
Redo, M., Prewysz-Kwinto, P. (2021). Matematyka finansowa. Warszawa: Wydawnictwo Naukowe PWN.
Sobczyk, M. (2011). Matematyka finansowa: podstawy teoretyczne, przykłady, zadania. Warszawa: Agencja Wydawnicza Placet. |

	Supplementary literature	Borowski, J., Golański, R., Kasprzyk, K., Melon, L., Pogórska, M. (2003). Matematyka finansowa: przykłady, zadania, testy, rozwiązania. Wałbrzych: Szkoła Główna Handlowa. Cegłowski, B., Podgórski, B. (2021). Finanse z arkuszem kalkulacyjnym. Warszawa: Wydawnictwo Naukowe PWN. Kellison, S. G. (2008). Theory of interest. New York: McGraw-Hill. Piasecki, K., Ronka-Chmielowiec W. (2011). Matematyka finansowa. Warszawa: C.H. Beck.
	eResources addresses	Adresy na platformie eNauczanie: Matematyka finansowa NST 24/25 - Moodle ID: 39670 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=39670
Example issues/ example questions/ tasks being completed	Calculation of the future value of investments, credit instalments and expected retirement value.	
Work placement	Not applicable	

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