GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	FINANCIAL ENGINEERING, PG_00061598		
Field of study	Management, Management		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	Specialty subject group 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	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department Of Finance -> Faculty Of Management And Economics -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Ewa Mazurek-Krasodomska	
	Teachers	dr inż. Ewa Mazurek-Krasodomska	

Lesson types and methods of instruction

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	5.0	25.0	75

Subject objectives

Values derivatives using them to reduce financial risk

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K02] makes competent and ethical decisions, taking care of the public interest and maintaining economic, social and environmental values	uses the results of analyzes to make decisions in order to create and maintain economic, social and environmental values	[SK5] Assessment of ability to solve problems that arise in practice
[K7_W04] analyzes complex management problems in an in-depth way on the basis of reliable data and properly selected methods, obtaining logical solutions	analyzes various types of derivatives, obtaining innovative solutions to the problems of financing the organization's activities	[SW1] Assessment of factual knowledge

Subject contents

The essence and application of financial engineering
Derivatives and their classification
Valuation of forward contracts for assets
Currency forwards/futures
Commodity forwards/futures
Valuation of FRA contracts
Valuation and construction of currency swap contracts
Valuation and construction of interest rate swap contracts
Option pricing using the binomial model
The Black-Scholes model in option pricing
Greek coefficients
Option strategies and examples of their use
Exotic derivatives and their use
Strategies for investing in derivatives
Efficiency of hedging strategies

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Exam	60.0%	50.0%
2 tests per semester	60.0%	50.0%

Recommended reading	Basic literature	Hull, J. (1997). Kontrakty terminowe i opcyjne. Wprowadzenie. Warszawa: WIG Press Hull, J. C.(2011). Zarządzanie ryzykiem instytucji finansowych. Warszawa: Wydawnictwo Naukowe PWN Jajuga. K. (2015). Inwestycje: instrumenty finansowe, aktywa niefinansowe, ryzyko finansowe, inżynieria finansowa. Warszawa: Wydawnictwo Naukowe PWN Jajuga, K. (red.). (2020). Zarządzanie ryzykiem . Warszawa: Wydawnictwo Naukowe PWN
	Supplementary literature	Bartkowiak, M. (2014). Instrumenty pochodne. Wprowadzenie do inżynierii finansowej. Poznań: Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu Pruchnicka-Grabias, I.(2012). Egzotyczne opcje finansowe. Systematyka, wycena, strategia. Warszawa: CeDeWu Weron, A., Weron, R. (2019). Inżynieria finansowa. Wycena instrumentów pochodnych. Symulacje komputerowe. Statystyka rynku. Warszawa: Wydawnictwo Naukowo-Techniczne
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Binomial model Black-Scholes model	
Work placement	Not applicable	

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