GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	FINANCIAL ENGINEERING, PG_00067726		
Field of study	Management, Management		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	Optional subject group Specialty subject group 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	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		
	Teachers		

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: 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	24	3.0	48.0	75

Subject objectives

Values derivatives using them to reduce financial risk

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K02] acts entrepreneurially, making competent and ethical decisions that consider the public interest as well as economic, social, and environmental values.	uses analytical results to make ethical decisions that support the creation of economic, social, and environmental value	[SK5] Assessment of ability to solve problems that arise in practice
[K7_W04] has an in-depth understanding of analytical methods, reliable data sources, and copyright principles in the context of solving contemporary management problems.	knows financial engineering methods and uses reliable sources in analytical work	[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	