



Subject card

Subject name and code	FINANCIAL ENGINEERING, PG_00067688						
Field of study	Management						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2027/2028	
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	Full-time studies	Mode of delivery				at the university	
Year of study	2	Language of instruction				Polish	
Semester of study	3	ECTS credits				3.0	
Learning profile	general academic profile	Assessment form				exam	
Conducting unit	Department of Finance -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor						
	Teachers						
Lesson types	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] 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	<p>Course content – lecture</p> <p>The essence and application of financial engineering</p> <p>Derivatives and their classification</p> <p>Valuation of forward contracts for assets</p> <p>Currency forwards/futures</p> <p>Commodity forwards/futures</p> <p>Valuation of FRA contracts</p> <p>Valuation and construction of currency swap contracts</p> <p>Valuation and construction of interest rate swap contracts</p> <p>Option pricing using the binomial model</p> <p>The Black-Scholes model in option pricing</p> <p>Greek coefficients</p> <p>Option strategies and examples of their use</p> <p>Exotic derivatives and their use</p> <p>Strategies for investing in derivatives</p> <p>Efficiency of hedging strategies</p>						
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		
Example issues/ example questions/ tasks being completed	Binomial model Black-Scholes model		
Practical activities within the subject	Not applicable		

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