



Subject card

Subject name and code	Financial Engineering, PG_00053152						
Field of study	Management, Management						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group			Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Part-time studies	Mode of delivery			blended-learning		
Year of study	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Faculty of Management and Economics						
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	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		6.0		45.0	75
Subject objectives	uses advanced derivative instruments to reduce financial risk and conducts their valuation.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_W08] has an in-depth knowledge of selected methods and techniques supporting economic decision-making processes	knows exotic and traditional derivatives			[SW1] Assessment of factual knowledge		
Subject contents	[K7_U10] uses appropriate methods and techniques to support the decision-making process to solve problems occurring in livestock units	uses derivatives to reduce the company's financial risk			[SU4] Assessment of ability to use methods and tools		
	The essence and application of financial engineering. Valuation of forward/futures contracts on assets. Valuation of FRA contracts. Valuation and construction of currency and interest rate swap contracts. Option valuation using the binomial model. Black-Scholes model in option pricing: stocks without dividends, stocks generating dividends. Probability of price change. Examples of exotic options and their use. Option strategies - examples Option strategies - risk and rate of return Greek coefficients Delta hedging Effectiveness of hedging strategies.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	additional activities	0.0%			10.0%		
	theory test	50.0%			10.0%		
	colloquium	60.0%			80.0%		

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 eNauczenie: 23/24 N Inżynieria finansowa - Moodle ID: 37726 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=37726
Example issues/ example questions/ tasks being completed	Suggest the use of an exotic instrument to reduce the company's financial risk.	
Work placement	Not applicable	