

Subject name:		Basics of Financial Engineering	ECTS: 4
Effects:		The content of the effect assigned to the subject:	Directional effect reference:
<p>Knowledge: (In terms of knowledge, the graduate knows and understands)</p> <p>Skills: (In terms of skills, the graduate can)</p>	W1	the structure of financial market, its segments and instruments as well as the relationships between the commodity, financial and derivatives markets.	
	W2	financial engineering methods for pricing basic derivatives and assessing the risk faced by their purchasers and writers.	
	W3	statistical and econometric methods applied to estimate the volatility of financial instruments.	
	U1	prepare parameters necessary for pricing futures and options, select proper methods and tools for derivatives pricing and draw the pay-off profiles.	
	U2	predict financial results of derivatives applications in different market conditions.	
	U3	construct hedging strategies and rationally assess their efficiency in specific market conditions.	
Course content ensuring the achievement of learning outcomes:		The concept of financial engineering, its origin and subject. Financial and commodity markets as the environment for financial engineering. Standard forward and futures contracts (forward price, futures price). Standard options and methods for their pricing (the Black-Scholes model, the Cox-Ross-Rubinstein model). Options sensitivity (Greeks). Historical and implied volatilities. Option hedging strategies (spreads and combinations). Selected non-standard options (path-dependent, time-dependent, binary and two-asset options).	
Examination methods:		Written exam	