LLSMS2226
2016-2017

Derivative Pricing

5.0 credits	30.0 h	2q

Teacher(s) :	Vrins Frédéric ;
Language :	Anglais
Place of the course	Louvain-la-Neuve
Prerequisites :	Advanced courses in probability theory and finance course covering financial markets and products. Corresponding UCl course: -- LLSMS2225 (Elements of Stochastic calculus) -- LLSMS2100 (Advanced Finance)
Main themes :	-- Part I : Black-Scholes Model (discrete time Cox-Ross-Rubinstein, continuous time model Black-Scholes-Merton, greeks) -- Part II: arbitrage-free pricing (fundamental theorem of asset pricing). -- Part III : Interest rates products (FRAs, Swaps, caps, floors) and pricing (affine short rate model, arbres binomiaux). -- Part IV : Limits of the model and advanced methods.
Aims :	At the end of this course, the student will able to : To describe the use and the mechanics of derivatives in general, and in particular discuss their advantages and disadvantages for the society as a whole. Explain the principles of arbitrage-free valuation, and to interpret the price of such derivatives as the cost of setting up a self-financing replication strategy. Apply pricing strategies to value certain productsby using either analytical or numerical methods Discuss the use and misuse of pricing models LSM competency framework : 2.2, 2.3, 2.4, 3.1, 6.1, 8.1, 8.3 *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Evaluation methods :	An oral exam (60%) made of two parts: -- practice and theory. -- Two team works (25%) and one individual work (15%) that will be discussed at the exam.
Teaching methods :	-- 15 courses of 2 hours including exercices and programming sessions. -- Team works on R and Bloomberg.The students will also be invited to introduce themselves some financial products and discuss some methods to valkue and hegde those
Content :	The objective of this course is to introduce fundamental concepts valuing derivatives using the no-arbitrage assumption.
Bibliography :	-- Slides, Excel workbook and R code. -- Lectures conseillées : - Hull, J. Options, Futures and Other derivatives. - Portrait & mp; Poncet, Finance de marché, Dalloz, 2009. - Joshi, M. : Concepts and Practice of Mathematical Finance, Cambridge University Press, 2003. - Shreve, S. : Stochastic calculus for Finance I & mp; II, Springer 2004.
Faculty or entity in charge:	CLSM

Programmes / formations proposant cette unité d'enseignement (UE)

Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Business Engineering	INGE2M	5	-	🔍
Master [120] in Business Engineering	INGM2M	5	-	🔍
Master [120] in Economics: General	ECON2M	5	-	🔍