



MATHEMATICAL FINANCE	
Enrollment year	2020/2021
Academic year	2021/2022
Regulations	DM270
Academic discipline	MAT/06 (PROBABILITY AND MATHEMATICAL STATISTICS)
Department	DEPARTMENT OF MATHEMATICS "FELICE CASORATI"
Course	MATHEMATICS
Curriculum	PERCORSO COMUNE
Year of study	2°
Period	1st semester (29/09/2021 - 14/01/2022)
ECTS	6
Lesson hours	48 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	CARBONE RAFFAELLA (titolare) - 6 ECTS
Prerequisites	The contents of the courses "Probabilità e Statistica" and "Probabilità"
Learning outcomes	The aim is to give some fundamental notions about the applications to finance of the theory of probability and of stochastic processes.
Course contents	Introduction to some basic notions of mathematical finance: markets, options, strategies, options' pricing and hedging. Study of some main properties of markets in a discrete setting and of the Black and Scholes' model. Extended summary - Quick resume of some probabilistic tools (conditional expectations and martingales, in particular). - Definitions of basic objects used in mathematical finance: options, markets, strategies, arbitrage...

	- Pricing and hedging european options in discrete models (with discrete times and discrete probability space). - Brownian motion and elements of stochastic calculus. - Pricing and hedging european options in the Black and Scholes' model. - Problems connected to asian and american options.
Teaching methods	Lectures about theoretical contents and interactive lectures where students will be called to solve some easy problems.
Reccomended or required readings	"Introduction to Stochastic Calculus Applied to Finance", D.Lamberton e B. Lapeyre, Chapman&Hall/CRC
Assessment methods	Oral examination. The questions will concern the topics developed during the lectures. The student will have to prove an appropriate comprehension of the subject matter.
Further information	--
Sustainable development goals - Agenda 2030	\$lbl_legenda_sviluppo_sostenibile