UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Finanza Matematica M

2223-2-F8204B024

Learning objectives

The aim of the course is to introduce students to continuous time financial models and the necessary mathematical tools.

Contents

Continuous time stochastic processes and financial modeling

Detailed program

1. Probability essentials;
2. Finite variation processes;
3. Martingales;
4. Ito integral;
5. Ito's Lemma and exponential martingale;
6. Tanaka's formula and change of measure;
7. Black & Scholes;
8. Fundamental Theorem of Asset Pricing;
9. Stochastic volatility models.

Prerequisites

Probabiltiy, statistics and mathematical methods.

Teaching methods

Lectures and classes

Assessment methods

Written exam with exercises aiming at verifying the knowledge of the mathematical tools as well as of some simple financial models in continuous time.

Textbooks and Reading Materials

S. Shreve, Stochastic Calculus for Finance, Springer, 2004.

Lecture Notes

Semester

First semester

Teaching language

Italian

Sustainable Development Goals