Introduction to quantitative finance

ECTS : 3

Description du contenu de l'enseignement :

The goal of this course is to provide a good background in quantitative finance. After some reminders on probability theory (change of probability measure, random variables, usual distributions, conditioning), the course is planed as follows:
1) Classical financial market modeling: stochastic basis, stochastic processes, price processes and self financing portfolio processes in discrete-time. Examples of price dynamics and portfolio dynamics in continuous time; interpretation by discretization.
2) Fundamental theorem of asset pricing; pricing of European and Asian options.
3) Examples of pricing by Monte Carlo numerical simulations. Programming in Python applied to classical models, e.g. the Black and Scholes model.

Compétence à acquérir :

Théorie des probabilités et mathématiques financières.