VBA Programming

ECTS : 3

Description du contenu de l'enseignement :

Course objectives
The course is designed to cover a range of derivatives pricing algorithms, from the modeling techniques to practical applications using VBA in Excel.
Course outline
1. Initializing with Excel and VBA functions

- Useful Excel functions
- Introduction to VBA
- Building first application in VBA

2. Black-Scholes model
- Classic Black-Scholes formula
- Put-Call parity
- "Greeks" computing

3. Other computational methods
- Binomial method in option pricing (Cox, Ross and Rubinstein method and "Greeks" in binomial trees)
- Monte-Carlo simulation (Random generator, Stock price simulation and Monte-Carlo method and variance reduction)

4. Volatility and beyond
- Historical volatility
- Implied volatility
- Numerical methods

Compétence à acquérir :

Master VBA programming of basic derivatives pricing models

Mode de contrôle des connaissances :

1 final exam and 1 complete assignment.

Bibliographie, lectures recommandées :

Jackson M. and M. Staunton, Advanced modelling in finance using Excel and VBA, Wiley, 2001.

Document susceptible de mise à jour - 19/02/2026
Université Paris Dauphine - PSL - Place du Maréchal de Lattre de Tassigny - 75775 PARIS Cedex 16