

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.