Course Materials

1. Weekly Slides
2. Weekly Additional Examples
3. Assignments ($\times$ 4)
4. Mid-term revision question pack (S5)
5. End-term revision question pack (S9)
6. Sample Final Exam paper

Reference Text

The course materials is self-contained.

For additional reading:

1. Steven Shreve (2004): "Stochastic Calculus for Finance I & II"
2. Martin Baxter and Andrew Rennie (2006): "Financial Calculus: An Introduction to Derivative Pricing"
3. Mark Joshi (2008): "The Concepts and Practice of Mathematical Finance"
4. Tim Falcon Crack (2014): "Basic Black-Scholes: Option Pricing and Trading"

Components

- Class Participation: 10% (individual)
- Project: 20% (group)
  $\Rightarrow$ Form groups of 4-to-6 persons each.
- Assignments ($\times 4$): 20% (individual)
- Final Exam: 50% (individual)

Project — See Separate Documentation

Objective: use Python to implement part of the models covered in this course.

1. Analytical option pricers
2. Static replication of European payoffs
3. Dynamic hedging
4. Stochastic Volatility models
5. Calibration to market data