



# Financial Engineering

**Lecturer:** Prof. Dr. Markus Leippold

**Credits (ECTS):** 6.0

## Course contents:

This lecture is intended for students who would like to learn more on equity derivatives modelling and pricing. After introducing fundamental concepts of mathematical finance including no-arbitrage, portfolio replication and risk-neutral measure, we will present the main models that can be used for pricing and hedging European options e.g. Black- Scholes model, stochastic and jump-diffusion models, and highlight their assumptions and limitations. We will cover several types of derivatives such as European and American options, Barrier options and Variance- Swaps. Basic knowledge in probability theory and stochastic calculus is required. Besides attending class, we strongly encourage students to stay informed on financial matters, especially by reading daily financial newspapers such as the Financial Times or the Wall Street Journal.