



University of
Zurich ^{UZH}

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Master of Science in Quantitative Finance

Mathematical Foundations of Finance

Lecturers: Prof. Dr. Walter Farkas, Prof. Dr. Martin Schweizer

Credits (ECTS): 4.0

Course contents:

First introduction to main ideas and tools from mathematical finance, Financial market models in finite discrete time, Absence of arbitrage and martingale measures, Valuation and hedging in complete markets, Basics about Brownian motion, Stochastic integration, Stochastic calculus: Ito formula, Girsanov transformation, Ito's representation theorem, Black-Scholes formula