

# Announcement SoSe 2022

## Lecture in Mathematical Finance

### Financial Mathematics 2

Prof. Dr. Rudi Zagst

- Area: / Modulnr.:** Mathematical Finance / MA3408
- Course Structure:** Lecture: 4h  
Exercises: 2h
- Content:** Stochastic processes, Itô calculus, financial markets, arbitrage and completeness, pricing and hedging of contingent claims, Black-Scholes model and generalizations, pricing of exotic options, stochastic volatility and jump models, numerical methods, implementation of financial models (Monte Carlo simulation, Fourier Pricing, etc.).
- Audience:** MSc Mathematics, MSc Mathematical Finance and Actuarial Science
- Prerequisite:** MA0009 (Introduction to Probability and Statistics),  
helpful: MA4405 (Stochastic Analysis)
- Literature:** **R. Zagst (2002):** Interest Rate Management, Springer Finance  
**N.H. Bingham und R. Kiesel (2004):** Risk-Neutral Valuation: Pricing and Hedging Financial Derivatives, Springer Finance  
**S.E. Shreve (2004):** Stochastic Calculus for Finance II: Continuous-Time Models, Springer Finance  
**J.C. Hull (2006):** Options, Futures, and Other Derivatives, Prentice-Hall  
**M. Musiela und M. Rutkowski (2005):** Martingale Methods in Financial Modelling, Vol. 36, Springer
- Certificate:** Exam, 9 CP
- Lecture/Exercises:** see TUMonline