

# Announcement SoSe 2023 Lecture in Mathematical Finance

## Continuous Time Finance (FIM)

Prof. Dr. Rudi Zagst

**Area: / Modulnr.:** FIM – Core course / MA9973

**Course Structure:** Lecture: 2h Exercises: 2h

**Content:** Stochastic processes, Itô calculus, financial markets in continuous time, no-arbitrage and completeness, pricing and hedging of contingent claims, Black-Scholes model and generalizations, pricing of exotic options, numerical methods and applications

**Audience:** MSc Finance & Information Management

**Prerequisite:** WI001287 – Basics of FIM,  
MA9972 - Discrete Time Finance (recommended)

**Literature:** **Albrecher, Binder & Mayer (2009):** Einführung in die Finanzmathematik, Birkhäuser  
**S.E. Shreve (2004):** Stochastic Calculus for Finance II: Continuous-Time Models, Springer Finance  
**J.C Hull (2012):** Options, Futures and other Derivative, 9<sup>th</sup> ed., Pearson  
**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  
**M. Musiela und M. Rutkowski (2005):** Martingale Methods in Financial Modelling Vol. 36, Springer

**Certificate:** Written or oral examination, 6 CP

**Location/Time:** see TUMonline