

# Announcement Summer Term 2023

## Advanced Seminar

### Seminar on recent topics in credit insurance

Prof. Dr. Matthias Scherer & Constantin Siggelkow

**Content:**

- Credit risk scoring using machine learning models
- Trade credit modelling using CVaR criterion
- Dynamic pricing
- Dependence modelling

**Audience:** MSc Mathematics, MSc Mathematical Finance and Actuarial Science

**Prerequisite:** Insurance Mathematics 1 (MA3405), Insurance Mathematics 2 (MA3406)  
helpful: Introduction to Probability Theory (MA1401), Basic Statistics (MA2402) or Einführung in die Wahrscheinlichkeitstheorie und Statistik (MA0009)

**Literature:**

**R. Tyrrell Rockafellar und S. Uryasev (2000):** Optimization of conditional value-at-risk, Journal of Risk

**O. Besbes and A. Zeevi (2014):** On the (surprising) sufficiency of linear models for dynamic pricing with demand learning, Management Science

**Z. Chen, K. Yuan, S. Zhou (2018):** Supply chain coordination with trade credit under the CVaR criterion, International journal of Production Research

**S. Shalev-Shwartz and S. Ben-David (2014):** Understanding Machine learning, Cambridge university press

**L. Breiman (2001):** Random forests, Springer

**R. Khanna, M. Awad (2015):** Efficient Learning Machines, Apress open

**J.-F. Mai, M. Scherer (2008):** A tractable multivariate default model based on a stochastic time-change, International Journal of Theoretical and Applied Finance

**J.-F. Mai, P. Olivares, S. Schenk, M. Scherer (2013):** A multivariate default model with spread and event risk, Applied Mathematical Finance

**Certificate:** Presentation, 3 CP

**Lecture/Exercises:** see TUMonline/Moodle