



**Announcement WiSe 2016/2017
Lecture in Mathematical Finance**

Financial Engineering with Copulas

Prof. Dr. Matthias Scherer

Area: / Modulnr.:	Mathematical Finance / MA 5715
Course Structure:	Lecture: 2h Exercises: 1h Programming: 1h
Content:	Motivating examples (e.g. dependence in asset returns and default times), definition of copulas and Sklar's Theorem, dependence measures and their properties, computation rules for multivariate probability distributions, families of copulas and general construction principles, parameter estimation, stochastic simulation, applications (e.g. to portfolio credit-risk modelling), uncertainty concerning dependence.
Audience:	MSc Mathematik, MSc Mathematical Finance and Actuarial Science, FIM.
Prerequisite:	MA2402 (Basic Statistics).
Literature:	H. Joe (1997): Multivariate Models and Dependence Concepts, Chapman and Hall/CRC, London. J.-F. Mai, M. Scherer (2012): Simulating copulas: Stochastic models, simulation algorithms, and applications, Imperial College Press. J.-F. Mai, M. Scherer (2014): Financial Engineering with Copulas Explained, Palgrave. A.J. McNeil, R. Frey, P. Embrechts (2005): Quantitative Risk Management, Princeton University Press, Princeton, New Jersey. R.B. Nelsen (2006): An Introduction to Copulas, second edition, Springer, New York.
Certificate:	Exam, 6 CP.
Location:	Parking 11 / Garching-Hochbrück, Room 2.02.01
Lecture/ Exercises:	T.B.A.