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

Commodities Markets

Prof. Dr. Lorenz Schneider

Area: / Modulnr.:	Mathematical Finance/ MA 5725
Course Structure:	Lecture: 2h
Content:	The aim of this course is to give an introduction to commodity markets, the financial products traded on them, and how these products are mathematically modelled by market participants. Features of these markets such as Contango, Backwardation, and the Samuelson Effect will be presented. The commodities studied will include Crude Oil, Natural Gas, Electricity, Base Metals, Precious Metals, and Agriculturals. Products covered will include Forward and Futures Contracts, Asian Swaps, Asian, Basket and Barrier Options, and more exotic Options such as Spread Options, Calendar Spread Options and Swing Options. Models used for pricing these products will include extensions of the Black-Scholes model such as Local Volatility, Stochastic Volatility, and One- and Multi-Factor Models of the entire Futures curve. These models will be implemented in VBA, C++ and/or C#.
Audience:	MSc Mathematik
Prerequisite:	MA4405 (Stochastic Calculus)
Literature:	**Clark, I.(2013):** Commodity Option Pricing: A Practitioner's Guide, Wiley **Clark, I. (2011):** Foreign Exchange Option Pricing: A Practitioner's Guide, Wiley **Downey, M.(2009):** Oil 101, Wooden Table Press **Geman, H.(2005):** Commodities and Commodity Derivatives, Wiley **Hull, J.(2012):** Options, Futures and Other Derivatives, 8th edition, Pearson **Roncoroni, A., G. Fusai and M. Cummins (2015):** Handbook of Multi-Commodity Markets and Products: Structuring, Trading and Risk Management, Wiley
Certificate:	Exam, 3 CP
Location/ Time:	TBA