

INTEGRATED MASTER PROGRAM (IMP)

MEP Master of Economics and Politics

MF Master of Finance

MIE Master of Internet Economics

Course title	Interest Rate Theory (Topics Course)		
Instructor	Prof. Dr. Eva Lütkebohmert-Holtz	Semester	4th
ECTS (credit points)	6	Contact hours (SWS)	2+2
Prerequisites	Principles of Finance, Futures and Options		
Learning target/ qualification	Introduction to short-rate and forward rate models and to the pricing of interest rate derivatives		
Content	<p>Within the elementary arbitrage pricing theory, interest rates are usually assumed to be constant. However, this assumption is, of course, not very realistic. In fact, the variation of interest rates is one of the major risks financial institutions like banks and insurance companies are exposed to. To manage and control these risks, there exists a large variety of interest-linked products and derivatives, and the amount of money invested in interest rate markets typically is much higher than in stock markets.</p> <p>In this topics course, we will introduce the most important interest-based products and related contracts like bonds, swaps, caps/floors, interest rate futures as well as swaptions and show how they can be priced in different interest rate models. We will discuss short rate as well as forward rate models in this context. Most of these are driven by a Brownian motion, therefore some basic knowledge on this process and related stochastic differential equations would be desirable. If there is some time left at the end, we may also study some market models for LIBOR modeling.</p>		
Exam type	Oral presentation, seminar paper, and 120 min written examination at the end of the semester		
Literature	<p>Andersen, L., Piterbarg, V.: Interest rate modeling. Atlantic Financial Press, 2010</p> <p>Brigo, D., Mercurio, F.: Interest Rate Models - Theory and Practice (2nd ed.). Springer, 2006</p> <p>Filipovic, D.: Term-Structure Models: A Graduate Course. Springer, 2009</p> <p>Hull, J.C.: Option, Futures, and other Derivatives (7th ed.). Pearson Prentice Hall, 2009</p> <p>Zagst, R.: Interest Rate Management. Springer, 2002</p>		
Additional Information & Links	http://www.finance.uni-freiburg.de/		