Course

Financial Risk Management

Lecturer	**Duration**	**ECTS /Credits**
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Course Character	**Semester**	**Course Language**
Elective Course	Fall Semester	English

Prerequisites
Basics of Business Finance

Description of the Course
This course is a thorough study of risk management in the financial industry with special emphasis on banks. It starts with some quantitative fundamentals (Term Structure Analysis, Value at Risk etc.). Then, simple hedging techniques using derivatives are discussed. After this, a study of the management of interest rate risk, credit risk (including credit metrics and credit derivatives), and currency risk is provided. Finally, an integrated risk and return approach is explored.

Course components

a. **Homework**: Homework problems will be assigned in class and most of the solutions will be discussed in class.

b. **Attendance and participation**: Attendance and participation in class is strongly encouraged as general discussion, asking questions, and answering questions will foster the understanding of the course contents.

c. **Exam**: The exam will be held during the examination period at the end of the semester. The date will be determined by the examination board. The time allowed is 90 minutes. The exam will be based on homework exercises, lecture, and the material and exercises discussed in class. It may include problems, multiple choice, true/false, short essay answers, short case studies etc. To receive a passing grade for the course students must obtain at least 50% of the total points possible.

Preparation for and Participation in Class
You are expected to have completed all assigned readings and to have, at a minimum, attempted the homework assignments prior to each class. Classroom lectures/discussions will be utilized to develop and enhance your understanding of the material. You should be prepared at all times to actively participate in classroom discussions, and you should attend class and participate on a regular basis. Please bring a calculator to each class.

Course Outline

1. Quantitative Fundamentals of Risk Management
    1.1. Term Structure Analysis
        1.1.1. Yield-to-maturity (YTM)
        1.1.2. Spot Rates (Zero-Coupon Yields)
        1.1.3. Forward Rates and Forward Yield Curves
        1.1.4. Discount Factors
    1.2. Duration, Modified Duration and Convexity
    1.3. Volatility and the Standard Normal Distribution

4.3. Hedging against credit risk using Credit Default Swaps and Total Return Swaps
    4.3.1. Overview of credit derivatives
    4.3.2. Credit Default Swaps
    4.3.3. Total Return Swaps

5. Managing Currency Risk
    5.1. Introduction to Currency Risk
    5.2. Calculating Forward Exchange Rates
    5.3. Calculating a Currency Value at Risk

6. Integrated Risk and Return Management in Banks
    6.1. Risk limits
    6.2. Risk Capital and RAROC
    6.3. Present value oriented management of the bank's interest book
        6.3.1. Calculating the present value of the interest book
        6.3.2. Calculating the risk-adjusted performance of the interest book

References

The seminar is based primarily on the following references:

Bessis, J.:	Risk Management in Banking. John Wiley & Sons, Ltd 2002.
Jorion, P.:	Financial Risk Manager Handbook. John Wiley & Sons, Inc, Hooken 2003.
Martin, J.S.:	Applied Math for Derivatives. John Wiley & Sons (Aisa) Pte Ltd 2001.
Internet sources:	www.bis.org, www.eurexchange.com

The seminar is also based on the following references:

Adams, A. et al:	Investment Mathematics. Chichester 2003.
Belmont, D.:	Value Added Risk Management in Financial institutions: Leveraging Basel II & Risk Adjusted Performance Management. Wiley 2004.
Bruns, C./Meyer-Bullerdiek, F.:	Professionelles Portfoliomanagement. Schäffer-Poeschel 2013.
Demine, J./Bissada, Y.F.:	Asset & Liability Management. Financial Times 2002.
Fabozzi F.J./Fong, G.:	Advanced Fixed Income Portfolio Management. Mcgraw-Hill Professional 1994.
Flavell, R.:	Swaps and Other Derivatives. Wiley 2002.
Rose, P.S.:	Commercial Bank Management. Mcgraw-Hill 2002.
Solnik, B.:	International Investments. Addison Wesley 2000.
Rolfes, B.:	Gesamtbanksteuerung. Schäffer-Poeschel 1999.
Schierenbeck, H./Lister, M./Kimße, S.:	Ertragsorientiertes Bankmanagement. Gabler Verlag 2008.
Schierenbeck, H.:	Ertragsorientiertes Bankmanagement. Gabler Verlag 2005.

Important Note:

The above outline is tentative and can be modified. This outline is only designed to give students an idea of the topics and the rate at which they will be covered. Some of the above topics will be covered in greater detail than others. The relative importance of each topic will be indicated in class.