Course Outline
(As of 14 January 2010)

The course will offer an introduction to the field of financial risk management, with an emphasis on the practices of the specialist market and credit risk functions at large financial institutions. Many of the ideas and techniques used at large financial institutions are also applicable at smaller institutions and more specialized financial organizations such as proprietary trading firms and asset management companies. The topics covered will include the management of market risk, including vanilla and exotic options risk, credit risk, operational risk, model risk, and statistical techniques for risk measurement such as value-at-risk.

Requirements

We will use the book by Steven Allen titled Financial Risk Management: A Practitioner’s Guide to Managing Market and Credit Risk (Wiley, 2003) as a text. In addition, a number of other readings and cases will be assigned.

The course requirements will consist of a final examination on Friday, May 7, from 1:30–4:30 p.m. (40% weight in the determination of the course grade), various short homework assignments during the semester (20% weight), class participation (10% weight), and a group project (30% weight). In the group project, you and your group will select a financial disaster that occurred during the past 20 years, research it, become expert on it, and analyze the mistakes that were made and how the disaster could have been avoided. Then, your group will present your analysis to the class on either class 18 or 19 (29 or 31 March). Based on feedback from the instructor and your fellow class members, you will correct your errors and oversights and submit a written report on Wednesday, 5 May.

Finance 512 or the equivalent must either be taken prior to enrolling in this course, or else be taken simultaneously with this course.

Other Relevant Information

I strongly recommend that students read Risk, which is available in the Business Library. Risk is the best source of information about current issues in risk management, financial engineering, and the OTC derivatives markets.

I may be found in room 109 Wohlers Hall, e-mail pearson2@illinois.edu, telephone 217 244 0490. Office hours are Monday and Wednesday, 2:00–3:00 p.m., and by appointment.

Some materials will be distributed through Illinois Compass (http://compass.illinois.edu).
Topics, Schedule, and Reading Assignments

Class 1 (20 January): Introduction to Risk Management

   Reading: Allen, Chapter 1

Class 2 (25 January): A Motivating Example: Bernard Madoff, LLC

   Reading: Markopolous memo

Class 3 (27 January): Risk Management Framework

   Reading: Allen, Chapters 2, 5 and 7

Class 4 (1 February): Interest Rate Swaps (background for interest rate risk measurement)

   Reading: To be announced

Classes 5 & 6 (3 & 8 February): Interest Rate Risk Measurement

   Reading: Allen, Chapter 8.

Classes 7-9 (10-17 February): Vanilla options risk

   Reading: Allen, Sections 9.1-9.3, 9.5
   Supplemental (optional) reading: Taleb, Dynamic Hedging, Chapter 16 and pages 110-113

Classes 10 & 11 (22 & 24 February): The use of price-volatility matrices and volatility surface sensitivities

   Reading: Allen, Sections 9.4, 9.6, 10.1

Classes 12 & 13 (1 & 3 March): Static and dynamic hedging of exotic options and long-dated interest rate and vanilla options products

   Reading: Allen, Sections 8.2.2, 9.6.3, 10.2, 10.3

Classes 14 & 15 (8 & 10 March) Correlation risk

   Reading: Allen, Sections 10.4, 10.5

Class 16 (15 March) No class

Class 17 (17 March): LTCM case

Classes 18 & 19 (29 & 31 March): Project presentations
Class 20-23 (5-14 April): Value-at-Risk and stress testing methodology

    Reading: Allen, Chapter 11

Class 24 & 25 (19 & 21 April): Credit risk methodology: Merton-KMV model, copula techniques

    Reading: Allen, Chapter 12

Class 26 & 27 (26 & 28 April): Basel standards; economic capital

    Reading: To be announced

Class 27-29 (28 April, 3 & 5 May): The subprime crisis; other topics as time permits; “do-overs” of presentations

    Reading: To be announced