Investment Management
Course Syllabus

Course Objectives

The objective of this course is to:

- provide an overview of institutional details linked to financial markets and the trading process
- provide an overview of historical trends and innovations in financial instruments and trading processes
- provide an overview of various financial instruments
- provide insight into the use of finance theory in investment management
- provide a guide to the measurement and analysis of risk of financial investments
- provide a guide to the measurement of performance of fund management
- address key issues in risk management.

Methods

The following methods and forms of study are used in the course:

- Lectures
- Written homework assignments
- Practice sessions covering homework exercises and additional exercises, e.g. from previous exams of the University of London

- Self-study

Literature

1. Essential reading:
   - Bodie, Zvi, Alex Kane, and Alan J. Markus, Investments, McGraw Hill, 2005 (Sixth Edition) or a Later Edition - short: BKM
   - Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, John Wiley, 2007 (Seventh Edition) or a Later Edition - short: EG
   - Instefjord, Norvald, Investment Management Study Guide, London: University of London Press, 2009 or a Later Edition- short: SG
2. Further reading:
   - Brunnermeier, Markus K., Asset Pricing under Asymmetric Information - Bubbles, Crashes, Technical Analysis, and Herding, Oxford University Press, 2001- short: B
   - Grinblatt, Mark and Sheridan Titman, Financial Markets and Corporate Strategy, McGraw Hill Irwin, 2002 (2nd Edition) - short: GT
   - Hasbrouck, Joel, Empirical Market Microstructure, Oxford University Press, 2007 - short: J
   - Lo, Andrew W., Hedge Funds: An Analytical Perspective, Princeton University Press, 2008 - short: L
3. The course outline below indicates the corresponding chapters for each topic.

Evaluation

Your performance in this course will be evaluated on the basis of the following:

- *Written homework.* Each homework assignment contains a date by which you need to hand it in to the teacher of the practice sessions (i.e., the class teacher).
  - Homework assignments will be graded. You are allowed to work in groups, but not to copy other students' homework. Therefore, the teacher of the practice sessions will frequently ask you to present a homework exercise in class. If you cannot explain something that you have handed in, then your homework grade for the whole semester will be lowered by 10 to 20 percentage points.
- *Participation in lectures and practice sessions.* We will constantly check for your attendance. Your presence should be active. We will evaluate your answers to questions, short presentations of homework exercises or reading assignments without necessarily assigning these tasks to any particular student in advance.
- *First term exam* (December).
- *Final exam* (April).

Grade Determination

- First term grade.
  - Homework: 15%
  - Participation in lectures and practice sessions: 15%
  - First term exam grade: 70%
- Final grade. The student needs to pass the final exam in order to pass the course. Therefore, the following weights apply only for students who have passed the final exam:
  - Homework during the whole year: 15%
  - Participation in lectures and practice sessions during the whole year: 15%
  - First term exam grade: 20%
  - Final exam grade: 50%

Course Outline

The book chapters listed in this course outline coincide with those listed in the Investment Management Subject Guide.

Chapter 1: Financial markets and instruments

Money and bond markets; Money market instruments; Bond market instruments; Equity markets; Equity instruments; Derivatives markets; Managed funds; Exchange traded funds; Exchange trading and over-the-counter trading; Clearing, settlements, margin trading, short sales and contingent orders; Regulation of financial markets.

Literature: BKM, ch. 1-4, 14, 20, 22, 23; EG, ch. 2, 3.

Chapter 2: History of financial markets

History of financial innovation; Recent financial innovations (e.g., floating rate debt, zero-coupon bonds, poison-pill securities, swaps, futures); Investment returns in equity and bond markets; Equity premium puzzle.

Literature: BKM, ch. 5, 6.

Chapter 3: Fund management and investment

Historical mutual fund performance; Market efficiency and behavioral finance; Return based trading strategies; Performance of hedge funds; Statistical arbitrage.

Literature: BKM, ch. 4, 12.

Chapter 4: Market microstructure

Types of markets; Limit Order Markets; Bid-ask bounce (Roll); Adverse selection (Glosten-Milgrom); Optimal insider trading (Kyle); Market microstructure and investment analysis.

Literature: BKM, ch. 3; J, ch. 1-3, 5, 7; Roll, R. (1984), A Simple Implicit Measure of the Effective Bid-Ask Spread in an Efficient Market, *Journal of Finance* 39, pp: 1127- 1139; Glosten, L., and P. Milgrom (1985), Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders, *Journal of Financial Economics* 14, pp: 71-100; Kyle, A. (1985), Continuous Auctions and Insider Trading, *Econometrica* 53, pp: 1315-1336.

Chapter 5: Diversification

Expected portfolio returns and variance; Utility functions and expected utility; Risk aversion; The mean-variance problem; Capital allocation with other utility functions (CARA, CRRA); Estimating covariances: the index model; Abnormal returns: Treynor-Black model; Factor models.

Literature: BKM, ch. 6-11, 27; EG, ch. 4-9, 13, 27.

Chapter 6: Portfolio immunization

Bond math; Term structure of interest rates; Yield to maturity; Duration; Immunization of bond and equity portfolios.

Literature: BKM, ch. 15, 16; EG, ch. 21, 22.

Chapter 7: Risk and performance measurement

Types of risk; Risk decomposition; Value-at-risk (VaR); Risk-adjusted performance measures; Performance measurement with changing portfolios (market timing).

Literature: BKM, ch. 24, 27; EG, ch. 25, 26.

Chapter 8: Risk management

Risk capital allocation; Put option protection; Portfolio insurance with calls; Non-linear payoffs; Extreme risk; Hedging volatility; Hedging credit risk.

Literature: BKM, ch. 27; EG, ch. 27.

Approximate Distribution of Hours by Topics and Activities

No.	Topic	Total	Lectures	Classes	Self-study
1	Financial Markets and Instruments	67	15	13	39
2	History of Financial Markets	35	7	7	21
3	Active Fund Management and Investment Strategies	31	7	6	18
4	Market Microstructure	32	8	6	18
5	Diversification	97	15	22	60
6	Fixed Income Securities and Portfolio Immunization	20	4	4	12
7	Risk and Performance Measurement	20	4	4	12
8	Risk Management	18	4	2	12
	Total	320	64	64	192