

# Investment Management

## Course Syllabus

**Lecturer:** Stanimir Morfov  
**Class Teacher:** Dmitry Kachalov

### Contact information

Teacher	Office	Office hour	E-mail
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### Course Description

Investment Management is a year-long course for 4th year students at ICEF with specialization in Banking and Finance. The course is taught in English. The External Programme of the London University offers an examination in this subject.

### Course Objectives

Learn about financial markets and instruments, investment strategies. Apply standard models of financial economics to problems of portfolio optimization, diversification, immunization, and risk management.

### Methods

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

- Lectures (2 hours a week).
- Written homework assignments.
- Practice sessions covering homework exercises and additional exercises, e.g. from previous exams of the University of London (2 hours a week)
- Self-study

Only few students are able to master the material of a course in finance by self-study alone. Therefore, we will oblige you to participate in class, and to do your homework (see

evaluation). Don't see this as a threat, rather a help for you to get used to continuous work.

## Literature

### 1. Obligatory:

- Bodie, Zvi, Alex Kane, and Alan J. Markus, Investments, McGraw Hill, 2005 (Sixth 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) - short: **EG**
- Instefjord, Norvald, Study Guide Investment Management, London: University of London Press, 2009 - short: **SG**

### 2. Also recommended:

- 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. In the course outline below the corresponding chapters for each topic are indicated. Additional literature may be distributed during the course.

## Evaluation

A central part of the course are homework assignments. Each of them contains a date by which you need to hand it in to the teacher of the practice sessions. 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, your homework grade for the whole semester will be lowered by 10 to 20 percentage points. 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.

- *Participation in lectures and practice sessions.* This includes, first, your presence which we will check every day of class. Plus, your presence should be active, i.e. we will evaluate your answers to questions, short presentations of homework exercises or reading assignments, without having necessarily assigned any particular student for these tasks in advance. If you have a very strong reason not to attend a significant part of the lectures and/or practice sessions in any particular semester, you need to communicate this to the lecturer no later than the third week of the semester in question. In such a case, the lecturer has the discretion to decide whether or not to replace this part of your grade by an essay assignment on a particular topic of the course. This implies that if you cannot attend during the whole year (and the lecturer agrees), you need to write two essays. In case the replacement has been authorized, the following applies: the essay has to contain no less than 15 A4 pages, font 11, single-spaced, margins less than 2.5 cm; the deadline for handing in the essay is December 10, 2008 for the first semester, and April, 10, 2009 for the second semester; if you turn in late, but less than a week, a discount to the essay grade of 20% will be applied; if you are late for more than a week, the grade for the essay will be 0.
- *First term exam* (December).
- *Final exam* (April).

## Grade Determination

- **First term grade.** The student needs to pass the first term exam in order to proceed in the second term. Therefore, the following weights apply only for students who have passed the first term exam:
  - 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 chapter numbers in this course outline are identical to the Study Guide Investment Management.

### **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; GT, ch. 1-3.

### **Chapter 2: History of financial markets**

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

Literature: BKM, ch. 5, 6.

### **Chapter 3: Active fund management and investment strategies**

Historical mutual fund performance; Market efficiency and behavioral finance; Return based trading strategies; Hedge funds.

Literature: BKM, ch. 4, 12; L

### **Chapter 4: Market microstructure**

Market microstructure effects on transaction prices; Bid-ask spread; Inventory risk; Limit Order Markets, Bid-ask bounce (Roll); Adverse selection (Glosten-Milgrom); Optimal insider trading (Kyle); Stealth Trading Hypothesis; Market microstructure and investment analysis.

Literature: J, ch. 1-3, 5, 7; Barclay, M. and J. Warner: "Stealth Trading and Volatility: Which Trades Move Prices?", *Journal of Financial Economics*, 34, pp. 281-305, 1993; B, ch. 1.2.1; Evans, M. and R. Lyons: "Order Flow and Exchange Rate Dynamics," *Journal of Political Economy*, 110, pp. 170-180, 2002.

### **Chapter 5: Diversification**

Expected returns and variance of portfolios; 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 and diversification; Factor models and the notion of immunization in equity portfolios (see end ch. 6 in SG).

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

### **Chapter 6: Fixed income securities and portfolio immunization**

Term structure of interest rates; Yield to maturity; Duration; Immunization of bond 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. 20; GT, ch. 21, 22; Basak, S. and A. Shapiro: “Value-at-Risk-Based Risk Management: Optimal Policies and Asset Prices,” *Review of Financial Studies*, 14, pp. 371-405, 2001.

## **Approximate Distribution of Hours by Topics and Activities**

No.	Topic	Total	Lec- tures	Classes	Self- study
1	Financial markets and instruments	65	13	13	39
2	History of financial markets	35	7	7	21
3	Active fund management and investment strategies	30	6	6	18
4	Market microstructure	30	6	6	18
5	Diversification	102	20	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