Financial Markets and Investments

Course Objectives and Outline

This course is concerned with the choice and evaluation of investment strategies and portfolio management. The goal of the course is to provide you with a deeper understanding and appreciation of the complex questions and tradeoffs facing any investor, along with the necessary theoretical background for critically evaluating alternative investment strategies and the modern literature on investments. That is, the course is designed to provide you with a conceptual framework for analyzing investment decisions; not a recipe for how to make a quick buck on Wall Street. The topics covered, time permitting, include:

I. Portfolio Theory and Asset Allocation
II. Portfolio Theory and Asset Allocation: Some Practical Considerations
III. Risk and Return in Equilibrium: The Capital Asset Pricing Model (CAPM)
IV. The CAPM: Empirical Evidence
V. Multi-Factor Models and the Arbitrage Pricing Theory (APT)
VI. Performance Evaluation
VII. Market Efficiency and Return Predictability
VIII. Options

Course Requirements

The treatment of uncertainty is essential to investment management. Consequently, the course will entail the use of a number of different statistical tools, ranging from the notion of probability distributions through linear regression analysis. The prerequisites for the course are Economics 205D (105D) or Economics 372 (172), and a statistics course, such as Statistics 103, 104, 113 or 114.

Course Evaluation

Your course grade will be based on two group projects, a midterm quiz, and a final exam. The group projects and the midterm quiz are optional. The final is required. The midterm quiz will be held in class on Thursday, October 12. The final exam is scheduled for Sunday, December 17, 7:00-9:00pm (two hours). You must take the exams at the scheduled times. Topics not covered in class prior to the exams will not be on the exams. Late group projects are not accepted under any circumstances.

Your course grade will be determined by the maximum total score obtained by weighting each of the group projects by 10%, the midterm quiz by 30%, with the remainder allocated to the score for the final exam:
### Date Maximum Percent Minimum Percent

- **Project #1**
  - TBA
  - 10%
  - 0%

- **Midterm Quiz**
  - October 12
  - 30%
  - 0%

- **Project #2**
  - TBA
  - 10%
  - 0%

- **Final Exam**
  - December 17
  - 100%
  - 50%

For example, if your score for the two group projects are 95 and 90, respectively, your score for the midterm is 80, and your score for the final is 75, your total score for the class would be $0.10 \times 95 + 0.10 \times 90 + 0.30 \times 80 + (1 - 0.10 - 0.10 - 0.30) \times 75 = 80$. Thus, if you do well on both of the group projects and the midterm, the final will “only” account for 50% of your overall grade. In some cases, I may also add a few bonus points to the total score based on your class participation and contribution to the classroom atmosphere. Since everything, except for the final exam, is optional, the final will be comprehensive.

**Contact Info**

My office is Room 228E in the Social Science (Econ.) Building. My email is: boller@duke.edu. My office hours are Wednesdays from 1:30-3:00 pm. If you are unable to see me during my regular office hours, or immediately after class, please email to set up an appointment.

**Teaching Assistants**

There are two teaching assistants for the class: Peter Horvath (peter.horvath@duke.edu) and Leonardo Salim Saker Chaves (leonardo.salim.saker.chaves@duke.edu). Peter will be holding weekly office hours on Fridays from 11am-noon, in Bostock, The Edge, Project Room 7. Leonardo will be holding weekly office hours on Thursdays from 1:30-2:30pm, in Social Science (Econ.) Room 113. Peter and Leonardo are your first points of contact in regards to questions about the lectures, projects, and end-of-chapter problems.

**Texts and Readings**

The required text for the course is:


The Bodie, Kane and Marcus (BKM) book provides a very comprehensive treatment of modern investment theory. We will not be able to cover the entire book in a single semester class. The book also comes with several online tools and Excel spreadsheets that will be useful for solving the homework problems.

The Bodie, Kane and Marcus textbook has a number of concept checks throughout, with solutions at the end of each chapter. It is a good idea to carefully study these. There are also some problems at the end of each chapter. I will be posting suggestive solutions to these on the class website. Even though these problems are entirely optional, from past experience, there is usually a strong correlation between the time and effort spent on solving these and the final exam performance.
I also encourage you to keep abreast of daily events in financial markets by reading the Wall Street Journal or other financial news sources. If you come across something that is relevant for what we have been discussing in class, please bring it up. I will do the same.

The recent book:


provides an excellent practically oriented discussion of many of the concepts that we will be covering in class, and how they form the basis for the strategies employed by some the most successful hedge funds.

**Class Website**

I will be posting all of my lecture notes and problems on the class website:


I will also be posting some additional readings and background material. Some of these additional readings are fairly technical, and I do not expect you to understand every detail.

**Class Outline and Reading List**

Most of my lectures will follow the BKM book fairly closely. However, for some of the topics, I will provide more in-depth discussions and a different point of view.

**Lecture Series 0: Review Material**

A) **Institutional Background**

BKM, Chapters 1-4.

B) **Statistical Review**

BKM, "Quantitative Review," Appendix A.


**Lecture Series I: Portfolio Theory and Asset Allocation**

BKM, Chapters 5, 6 and 7.
Lecture Series II: Portfolio Theory and Asset Allocation: Some Practical Considerations
   BKM, Chapter 8

Lecture Series III: Risk and Return in Equilibrium: The Capital Asset Pricing Model (CAPM)
   BKM, Chapter 9 and Section 27.3.

Lecture Series IV: CAPM: Empirical Evidence
   BKM, Chapter 13.

Lecture Series V: Multi-Factor Models and the Arbitrage Pricing Theory (APT)
   BKM, Chapter 10.

Lecture Series VI: Performance Evaluation
   BKM, Chapter 24.

Lecture Series VII: Market Efficiency and Return Predictability
   BKM, Chapters 11 and 12.

Lecture Series VIII: Options
   BKM, Chapters 20 and 21.