

**Hong Kong University of Science and Technology**  
**FINA 221: Investment Analysis and Portfolio Management**  
Spring 2010

**Instructor:** Prof. Darwin Choi

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Office Hours: Tuesdays and Thursdays 4:00 – 5:00pm, or by appointment

**Lectures:** *Section L3:* Tuesdays and Thursdays 12:00 – 1:20pm, Room 4503

*Section L4:* Tuesdays and Thursdays 1:30 – 2:50pm, Room 2407

**Tutorials (Optional):** *Both T3 and T4:* Fridays 9:30 – 10:30am, Room 4503

**Course Website:** <http://imes.ust.hk>

**Teaching Assistant:** Mr. Wade Ho, Office: Room 2391, Email: [wadeho@ust.hk](mailto:wadeho@ust.hk)

Office hours: Mondays and Wednesdays 3:00 – 5:00pm

## 1. Course Description

This course provides you with an introduction to the most fundamental aspects of investments. You will learn how to trade on financial exchanges, how to allocate money across several different types of securities/assets (how to *invest* rather than speculate), how to determine the fair price of a financial security, and how to determine whether a portfolio manager is doing a good job. You will also learn how to manage a portfolio consisting of fixed-income securities, and how to price, trade, and use derivative securities such as futures and options.

During the course we will come across some of the most important and influential concepts of finance theory: the Markowitz Portfolio Selection Model, the Capital Asset Pricing Model (CAPM), the concept of arbitrage, and the Black & Scholes option pricing formula. These concepts are so important that Nobel prizes have been awarded for their discovery!

During this course you will also gain and improve your software skills in using the spreadsheet program Microsoft Office Excel and the financial data base REUTERS. These are valuable skills to have when you are looking for a job in the finance industry.

## 2. Prerequisites

Prerequisite for this course is the successful completion of FINA 111 (or its equivalent).

Some of the material we will cover is quite technical. It is therefore advisable for you to review basic mathematical and statistical concepts, e.g., net present value, interest calculations, probability theory, and regression analysis at the beginning of the course.

It is also very important that you familiarize yourself with the spreadsheet program Microsoft Office Excel. We will be using this program extensively throughout the semester. In the past, many students have wasted a lot of time simply because they did not know how to use Excel effectively. If you have never used Excel, I strongly recommend that you go through the self-guided Excel tutorial from the textbook Excel Applications for Investments by Troy A. Adair, Jr., McGraw Hill Irwin International. One copy of the text is on reserve at the library.

## 3. Teaching Materials

### i) Required Material

- Z. Bodie, A. Kane, and A.J. Marcus (BKM), 2009, Investments (8th edition), Mc-Graw Hill Irwin International Edition. ISBN 978-007-126325-2.

### ii) Supplementary Texts on Hong Kong Financial Markets (Optional)

The textbook is unapologetically US-centric. To make up for this deficiency, I suggest you consult one or several of the following texts to acquaint yourself with Hong Kong financial markets. I have put copies of each of these books on reserve at the library. Given our time constraints, and the importance I place on mastering principles over memorizing details, *generally speaking*, I will not hold you accountable for the intricate details of one market or another.

- L.C.K. Low, 2000, Financial Markets in Hong Kong, Springer. ISBN 981-4021-73-3. (An overview of the institutional and regulatory environment.)
- Richard Yau, 2004, Securities Investment Practice in Hong Kong, The Hong Kong Institute of Bankers (HKIB). ISBN 962-7322-50-4. (Detailed description of primitive and derivative securities markets in Hong Kong, for HKIB certificate candidates.)
- L.S.F. Young and R.C.P. Chiang (eds), 1997, The Hong Kong Securities Industry, The Stock Exchange of Hong Kong Ltd. ISBN 962-7946-02-8. (An in-depth look at HK equity and debt markets.)
- Simon S.M. Ho, Robert Haney Scott, and Kie Ann Wong (eds), 2004, The Hong Kong Financial System: A New Age, Oxford University Press. ISBN 019-5937-49-X. (An updated reference on HK equity and debt markets.)

Although I will make an earnest attempt to map some of the US securities and market features described in the textbook to their HK equivalents, the burden really is on you to

make this translation. There are two benefits to doing so: 1) It puts you in control of your own learning process, and 2) It teaches you about the world's most influential financial markets. This knowledge will prove invaluable, particularly if you wish to spend part of your career in the US or Europe.

A fundamental message of this course is that securities are priced not in isolation but rather relative to other securities in the investment universe: Securities prices are relative, not absolute. As globalization removes barriers to the flow of goods, services, and, in particular, financial capital, it behooves all of us to think globally, not just locally. Specifically, this means that HK securities are priced not only in relation to other HK securities but also relative to securities across the world. Thus, you cannot escape having to learn about other markets, even if you never plan to leave HK!

You may wish to refer to the following internet links to learn more about HK's financial institutions:

*The Hong Kong Monetary Authority (Exchange Fund and Bank Regulation):* <http://www.info.gov.hk/hkma>

*The Hong Kong Exchange (Primitive and Derivative securities markets):* <http://www.hkex.com.hk>

*HSBC (Multinational HK bank):* <http://www.hsbc.com.hk>

*and its HK associate, Hang Seng Bank (62% owned by HSBC):* <http://www.hangseng.com>

*The Bank of China (large Chinese bank in Hong Kong):* <http://www.bochk.com>

### iii) Suggested Reading

A measure of a financial market's development is how well news is reflected in its securities prices. Market players who ignore the news inevitably fail. I would encourage you to get in the habit of keeping up with current events and world affairs by reading a good daily financial newspaper (Financial Times, Wall Street Journal, South China Morning Post) and a business periodical (The Economist, Business Week, Fortune, Forbes, Far Eastern Economic Review).

### iv) Additional References

#### *Textbooks*

- Z. Bodie, A. Kane, and A.J. Marcus, 2007, Essentials of Investments (6th edition), McGraw Hill Irwin International Edition. ISBN 007-125143-X. (Abridged version of the main textbook.)
- John C. Cochrane, 2005, Asset Pricing (Revised Edition), Princeton University Press. ISBN 0-691-12137-0. (Advanced graduate textbook.)
- John C. Hull, 2009, Options, Futures, and Other Derivatives (7th edition), Prentice Hall. ISBN 978-013-601586-4. (The leading modern textbook on derivatives.)

### *Survey Articles*

- John Y. Campbell, 2000, Asset Pricing at the Millennium, *Journal of Finance* 55, 1515-1568. (A graduate-level survey of asset pricing.)
- John C. Cochrane, 1999, New Facts in Finance, *Economic Perspectives* 23, 36-58. (A review essay of the transition from unpredictable returns and CAPM to predictable returns and multifactor models.)

### *Websites*

- The official web site for the textbook (BKM) contains a financial crisis update, additional background materials, and online practice quizzes: <http://www.mhhe.com/bkm>

McGraw-Hill also offers two additional websites you might find useful:

- *Investments Online (extra problems)*: <http://www.mhhe.com/business/finance/invonline/>
- *Finance Around the World*: <http://www.mhhe.com/business/finance/financemap/main.html>

## **4. Course Intended Learning Outcomes**

Once you have completed this course, you should be able to:

1. Allocate money across different asset classes in a scientific manner.
2. Price financial securities on the basis of fundamental financial principles.
3. Determine whether a portfolio manager is doing a good job.
4. Manage a portfolio consisting of fixed-income securities.
5. Price, trade, and use derivative securities (futures and options).
6. Perform financial analysis using Microsoft Office Excel and the REUTERS financial database.

## **5. Assessment and Grading**

Your final grade will be based on participation, homework, peer evaluation, and two exams. The relative weightings are as follows:

Participation	10%
Homework	15%
Peer Evaluation	5%
Midterm exam	30%
Final exam	40%

The letter grade you earn depends on your performance relative to other students taking the course. The final distribution of letter grades will be set in accordance with departmental and school policy.

### **i) Participation**

Active participation is important for your learning experience and is highly encouraged. It also keeps you involved and motivated rather than removed and disinterested. It is therefore important for you to prepare for class (do assigned readings *before* class), attend class (go to the section you have registered for and pay attention), and participate in class (make *constructive* contributions to discussions).

In addition to lectures, I encourage you to participate in the discussion board on the class website, where you can ask questions, answer your classmates' questions, and discuss finance-related topics. I will check the discussion board regularly, as well as discuss topics that I find interesting and relevant. You are also welcome to create new topics that you think will interest your classmates.

Both in-class and online participations will count toward your participation grade.

### **ii) Homework, Peer Evaluation, and (Optional) Tutorials**

There are four homework assignments, which are to be done on a team basis. Each team should consist of three people from the **same** registered lecture section. If you cannot form a group, Mr. Ho will assign you to a group. Your team should stay together until the end of the term. Each team needs to submit only one write-up of each homework assignment, and all team members will receive the same homework grade for their work. The peer evaluation at the end of the semester will give you a chance to rate your teammates' contributions to the homework assignments.

Please inform Mr. Ho of your team members by February 12, 2010.

Homework assignments must be submitted in **hardcopy**. Each homework assignment **must** list the group number, the names, and student id numbers of the members of the group that contributed to the assignment. Only those students whose names appear on the assignment will receive credit.

Some assignments require you to extract data from the REUTERS. A demonstration of REUTERS has been scheduled for February 23 during regular class time in the Financial Trading Lab (**Room 4117**). All students are required to attend the demonstration.

Homework assignments will be available on the course website once I have prepared them. You will have roughly two weeks to complete the assignment. Completed assignments must be turned in to Mr. Ho **by 12:00 noon** on the due dates to receive full credit. Any late assignment will earn zero credit – no exceptions.

The assignments will be returned during the tutorial sessions. During the tutorials you will have the opportunity to ask questions and discuss any problems with Mr. Ho. (The tutorial sessions are **not** mandatory. If you plan to skip them, contact Mr. Ho for the graded homework sets after they are returned in the tutorials. The tutorial schedule and guidelines will be posted on the class website.)

### **iii) Exams**

There will be two comprehensive closed-book, closed-notes exams: a midterm and a cumulative final, which will normally consist of short-answer and multiple-choice questions. All class sections will take the exams at the same time and in the same lecture hall. Details will be provided one week before the exams.

There will be no make-up exams offered. Should you miss the midterm, for whatever reason, your final exam will be re-weighted accordingly, i.e., it will be worth 70% of your final grade. Note that even though no make-up exam is offered, you must still explain your absence. Absence from the exam will not be excused except under circumstances described in the University Regulations. These cases must be substantiated by the appropriate documentation within one week of the missed exam.

Cheating will not be tolerated. Any student caught cheating during the exams will receive zero credit and may face further disciplinary action.

Please refer to <http://www.ust.hk/vpao/integrity/> for HKUST rules regarding academic integrity.

## **6. Teaching Philosophy**

Our class time must be spent wisely. There is little value in my belaboring descriptive passages from the textbook: these are best left to your own scrutiny and study. You will still be held accountable for that material, even if I never mention it in class. Homework assignments and exam questions may test your knowledge of such material; however, the grade points allotted to this material will be limited. What I will spend time on in class – and stress in exams – is the material I consider to be the more technically difficult. I will try to clarify the textbook's treatment and often provide a slightly different personal take on the same topic. However, I will stick quite closely to the textbook both in terms of content and presentation. I therefore urge you to do the assigned readings and problems as diligently as possible.

## **7. Class Conduct**

To foster the best learning environment and help develop your professional skills, I ask that we all abide by the following rules of conduct:

1. Come to the lectures. I may occasionally take attendance. Absentees will be noted.
2. We will start and end class on time. Late arrivals and early departures are rude and not admissible.
3. Mobile phones, PDAs, laptops, etc. must be kept off and stowed away. You *may* use your laptop in class if I am also using a computer for demonstrations. You may not "type" class notes. This is a needless distraction to you and others. Should you happen to forget to turn off your mobile phone before class, you must do so discretely as soon as possible or when it rings *without* taking the call.

## 8. Important Dates

Feb 12	Inform Mr. Ho of homework groups
Feb 23	Mandatory REUTERS training in the Financial Trading Lab ( <b>Room 4117</b> ) – no class held. Instead, go to Room 4117 during the regular time for your registered section.
TBA	1st Homework Set due
TBA	2nd Homework Set due
Mar 25	<i>No Class – Midterm exam: 7:00 to 9:00pm – all sections together</i> Location: LTC
TBA	3rd Homework Set due
TBA	4th Homework Set due
TBA	<i>Final exam</i>

## 9. Course Outline and Reading Assignments

Feb 2	Review of the syllabus and course overview
Feb 4	The Investment Environment and Financial Markets in the US and HK BKM: Chapter 1: <i>The Investment Environment</i> BKM: Chapter 2: <i>Asset Classes and Financial Instruments</i>
Feb 9	Trading Securities BKM: Chapter 3: <i>How Securities Are Traded</i>
Feb 11	Two Determinants of Investment Decisions: Return and Risk BKM: Chapter 5: <i>Learning About Return and Risk from the Historical Record</i>
Feb 16	<b>Third day of Chinese New Year – No class</b>
Feb 18	Two Determinants of Investment Decisions: Return and Risk (continued)
Feb 23	REUTERS training – mandatory Financial Trading Lab ( <b>Room 4117</b> )
Feb 25, Mar 2	Portfolio Mathematics and Capital Allocation BKM: Chapter 6: <i>Risk Aversion and Capital Allocation to Risky Assets</i>
Mar 4, 9	Portfolio Analyses and the Markowitz Portfolio Selection Model BKM: Chapter 7: <i>Optimal Risky Portfolios</i>
Mar 11	The Capital Asset Pricing Model (CAPM) BKM: 9.1

Mar 16	Index Models BKM: 8.1 – 8.3, 9.2 – 9.3
Mar 18	APT and Multifactor Models BKM: Chapter 10: <i>Arbitrage Pricing Theory &amp; Multifactor Models of Risk &amp; Return</i>
Mar 23	Midterm Review
Mar 25	<b>Midterm Exam – No class</b> Time: 7:00 – 9:00pm, Location: Lecture Theatre C (LTC)
Mar 30	Portfolio Performance Evaluation BKM: 24.1, 4.1 – 4.4
Apr 1, 6	<b>Mid-Semester Break – No Class</b>
Apr 8	The Efficient Market Hypothesis BKM: Chapter 11: <i>The Efficient Market Hypothesis</i> BKM: Chapter 12: <i>Behavioral Finance and Technical Analysis</i>
Apr 13	Fixed-Income Securities BKM: Chapter 14: <i>Bond Prices and Yields</i>
Apr 15	The Term Structure of Interest Rates BKM: 15.1 – 15.5
Apr 20, 22	Managing Fixed-Income Portfolios BKM: 16.1 – 16.4 (excluding horizon analysis)
Apr 27, 29	Futures Markets BKM: 22.1 – 22.4
May 4	Options Markets BKM: 20.1 – 20.5
May 6, 11	Options Valuation BKM: 21.1 – 21.4
May 13	Final Review
TBA	<b>Final Exam</b>