

# Hong Kong University of Science & Technology

## FINA 521: Investment Analysis

Spring 2010

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### 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.

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), and the concept of arbitrage. These concepts are so important that Nobel prizes have been awarded for their discovery! To read more about these concepts see the web page of the Nobel Foundation: <http://www.nobel.se/economics/index.html>.

### PREREQUISITES

Some of the material we will cover is **quite technical**. It is therefore advisable for you to review basic mathematical and statistical concepts such as: net present value, interest calculations, probability theory, and regression analysis at the beginning of the course. The pre-readings posted on the course website contain several pages of Stats Review that I suggest you read as soon as possible – even if you *believe* you master that material.

It is also very important that you familiarize yourself with the spreadsheet program Microsoft 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.

## **TEACHING MATERIALS**

### ***1. Required Material***

Z. Bodie, A. Kane and A.J. Marcus (BKM), Investments (8<sup>th</sup> edition), Mc-Graw Hill Irwin International Edition, 2008, ISBN 007-125916-3.

The official web site for this textbook contains additional background materials, recent investment news, and on-line 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>

### ***2. 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. Consequently, 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).

### ***3. Additional References***

Z. Bodie, A. Kane and A.J. Marcus, Essentials of Investments (6th edition), McGraw Hill Irwin International Edition, 2007, ISBN 007-304153-x. Abridged version of the main textbook.

John C. Cochrane, Asset Pricing, Princeton University Press, 2001. Advanced graduate textbook.

John C. Hull, Options, Futures, and Other Derivatives (5<sup>th</sup> edition), Prentice Hall, 2002. The leading modern textbook on derivatives.

### ***4. Survey Articles***

John Y. Campbell, "Asset Pricing at the Millennium", *Journal of Finance*, August 2000.  
A non-technical survey for the profession.

John C. Cochrane, "New Facts in Finance", *Economic Perspectives*, Federal Reserve Bank of Chicago, 1999. (See also Part IV of Cochrane's book, above.)

## **TEACHING PHILOSOPHY AND PEDAGOGICAL APPROACH**

While your goal may simply be to "pass the course", my goal is to help you do so by thoroughly understanding the material. To achieve these common goals, we should strive for you to understand the material at the conceptual, analytical, applied, and general levels. A *conceptual* understanding means you see how a particular topic fits into the big picture of the course and how the main ideas of a topic fit together. An *analytical* understanding means you master the precise workings and nuances

of a topic. An *applied* understanding means you can translate the analytics into step-by-step solutions to formulaic problems. A *general* understanding means you master the material well enough to solve non-formulaic problems (you can handle variations on the problems you have seen before), propose different analytical approaches (you can solve problems in more than one way), and offer new conceptual representations (you can draw parallels between topics that are not obviously related). While the analytical and applied levels may be all you have time for (or care about), achieving the conceptual and general levels of understanding will ensure that you not only pass the course but help you frame what you learn in this course within the broader context of your degree and education.

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. 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.

## GRADING

Your grade will be based on classroom participation, homework assignments, one mini-case report, and the final exam. The relative weightings are as follows.

Homework	40% (first 2 @ 15% each, and the last one @ 10%)
Final exam	50%
Mini-case	5%
Participation	5%

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.

## HOMEWORK ASSIGNMENTS

There will be three problem sets plus a mini-case report, all of which are to be done on a team basis. Each team should consist of *no more than 4* people. If you can’t form a group, Ms. Pan 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 grade for their work. It is therefore important that all team members **contribute equally** to the homework assignments. If you feel that some team members do not contribute their fair share to the assignments, you should talk to Ms. Pan or me. We will treat any complaints confidentially. [At the end of the course, you will be asked to evaluate your teammates’ performance and final grades will be adjusted accordingly.](#)

Please inform Ms. Pan of your team members by February 7.

Each homework assignment **must** contain a **cover page** that lists 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 cover page will receive credit for their homework assignment.

All homework assignments should be written in an easily readable fashion. Therefore, I encourage you to type the essay parts of each homework assignment. For equations, graphs, figures, etc. you

should use a pen instead of a pencil. If your handwriting is difficult to decipher you may lose 5% to 10% of the maximum homework grade, depending on the severity of the problem.

You will need to use Excel for parts of each homework assignment. For problems handled through Excel, it is **not** sufficient just to email Ms. Pan a big spreadsheet. You need to summarize your results clearly and indicate how you obtain these answers in a separate write-up, along with the solutions to other questions.

Homework assignments will be handed out and made 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 Ms. Pan **by 11:00 pm** on the due dates to receive full credit. Any late assignment will earn zero credit – no exceptions. Homework solutions will be available after the due date.

## EXAMS

There will be a comprehensive final exam, which will normally consist of short-answer and multiple-choice questions. Details will be provided as they become available. I will offer guidance on the content and format of the exam about one week before the exam.

There will be no make-up exams offered.

Cheating will **not** be tolerated. Any student caught cheating 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.

## CLASS PARTICIPATION

Active class participation is important for your learning experience and highly encouraged. It helps you to think *actively* rather than *passively*. As you move from the academic arena to the professional world you will need to shift your mindset from one of passive participation to active intervention. Start that shift now! Active participation also keeps you involved and motivated rather than removed and disinterested. Your class participation also helps me gauge whether you understand the material.

## 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) We will start and end class on time. Late arrivals and early departures are rude and not admissible.
- 2) Have your class materials (paper, pens, etc.) ready for the start of class. Close and pack them **after** I have dismissed class. Clicking binder rings and ruffling paper is rude and will not speed me along.
- 3) Talk in class only as called on in the course of participation activities. No chatter.
- 4) 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.

## STUDENT TEACHER INTERACTION

Students are always welcome to drop by my office and chat face to face whenever desired. Otherwise, office consultations are meant to help you with material you find unclear once you have made *every effort* to understand it. These efforts include: preparing for class (do assigned readings and problems *before* class), attending class (no private make-up classes), participating in class (ask questions as they arise), consulting your peers (form study groups), re-reading the relevant sections, letting the matter sit for a few hours, then approaching the problem/question from another angle. For best results, *have specific questions ready* if and when you do decide to consult me. I will meet with you at any mutually convenient time, and hold extra office hours before the final exam. Ms. Pan and I may also field common questions on the course website.

## IMPORTANT DATES

Feb. 7	Inform Ms. Pan of homework groups.
Feb. 21	1 <sup>st</sup> problem set due at 11 pm
Mar. 7	2 <sup>nd</sup> problem set due at 11 pm
Mar. 21	3 <sup>rd</sup> problem set due at 11 pm
Mar. 23	Mini-case report due before class at 9 am
Mar. ??	<b>Final exam</b> ???

## TENTATIVE COURSE OUTLINE

Date	Topics	Suggested reading	Discussion & exercises
Feb. 2 Feb. 9	<ul style="list-style-type: none"> <li>• Course overview</li> <li>• Trading financial assets</li> <li>• Risk-return tradeoff</li> <li>• Markowitz portfolio analysis</li> </ul>	<ul style="list-style-type: none"> <li>• BKM chapters 1-3 and 5</li> <li>• BKM chapters 6 and 7</li> </ul>	<ul style="list-style-type: none"> <li>• Problem set 1</li> </ul>
Feb. 23 Mar. 2	<ul style="list-style-type: none"> <li>• CAPM</li> <li>• Index models</li> <li>• APT and multifactor asset pricing models</li> </ul>	<ul style="list-style-type: none"> <li>• BKM chapters 9 and 13</li> <li>• BKM chapters 8, 10 and 13</li> </ul>	<ul style="list-style-type: none"> <li>• Problem set 2</li> </ul>
Mar. 9 Mar. 16	<ul style="list-style-type: none"> <li>• Efficient market hypothesis</li> <li>• Performance evaluation</li> <li>• Equity Valuation</li> <li>• Active portfolio management</li> </ul>	<ul style="list-style-type: none"> <li>• BKM chapters 11 and 24.1</li> <li>• BKM chapters 18 and 27.3</li> </ul>	<ul style="list-style-type: none"> <li>• Problem set 3</li> <li>• Mini-case report</li> </ul>
Mar. 23	<ul style="list-style-type: none"> <li>• Catch-up and review</li> <li>• Final exam???</li> </ul>		

### SELECTED PAPER REFERENCES (OPTIONAL)

- Campbell, John Y. (2000), “Asset Pricing at the Millennium,” *Journal of Finance*, 55(4), 1515. A non-technical survey for the profession.
- Jensen, Michael C., Black, Fischer and Scholes, Myron S. (1972), “The Capital Asset Pricing Model: Some Empirical Tests,” Michael C. Jensen, *STUDIES IN THE THEORY OF CAPITAL MARKETS*, Praeger Publishers Inc., 1972. Available at SSRN: <http://ssrn.com/abstract=908569>
- Fama, Eugene F. and MacBeth, James D. (1973), “Risk Return, and Equilibrium: Empirical Tests,” *Journal of Political Economy*, 81(3), 607.
- Fama, Eugene F. and French, Kenneth R. (1992), “The Cross-Section of Expected Stock Returns,” *Journal of Finance*, 47(2), 427.
- Roll, R. (1977), “A Critique of the Asset Pricing Theory’s Tests,” *Journal of Financial Economics*, 4 (2), 129.
- Fama, Eugene F. and French, Kenneth R. (1993), “Common Risk Factors in the Returns on Stocks and Bonds,” *Journal of Financial Economics*, 33(1), 3.
- Chen, Nai-Fu, Roll, Richard and Ross, Stephen A. (1986), “Economic Forces and the Stock Market,” *Journal of Business*, 59(3), 383.
- Fama, Eugene F. and French, Kenneth R. (1996), “Multifactor Explanations of Asset Pricing Anomalies,” *Journal of Finance*, 51(1), 55.
- Chevalier, Judith and Ellison, Glenn (1999), “Are Some Mutual Fund Managers Better Than Others? Cross-Sectional Patterns in Behavior and Performance,” *Journal of Finance*, 54(3), 875.
- Carhart, Mark M. (1997), “On Persistence in Mutual Fund Performance,” *Journal of Finance*, 52(1), 57.
- Grossman, Sanford J. and Stiglitz, Joseph E. (1980), “On the Impossibility of Informationally Efficient Markets,” *American Economic Review*, 70(3), 393.