

Syllabus for ECO2503: Financial Economics for MFE Students Asset Pricing and Portfolio Theory



The aim of this course is to survey the major asset theories, tools and results in portfolio choice and asset pricing. Although modern finance is a highly mathematical field, we will use mathematics only to enhance our understanding — “the major hurdles in Finance are conceptual rather than mathematical” (John Cochrane). Most of the course will focus on ‘classic’ asset pricing which is the foundation for any finance course that you might take here at UofT or elsewhere. As this class is intended to be a survey course, I want you to get “the big picture”, both conceptually and with respect to applicable tools. My main objective is that in five years time you will be able to look at a research paper and be able to understand its gist and to be able to read beyond the introduction. We will not go through institutional details, I leave this for your securities courses (CSC). I will not cover accounting related questions either, these will be covered during the accounting review and they will also be touched upon in your financial modelling module. You are expected to read the business section of at least one major newspaper (Wall Street Journal, Financial Times, The Globe and Mail, etc.).

Exams

There is a mid-term exam and a final. The mid-term takes place during class on October 21; we start at 4 p.m. sharp. The final takes place in December after classes have concluded; the date is TBA.

Assignments

There will be two assignments, one in portfolio theory, the other in asset pricing. Both will relate to practical and empirical aspects and are thus aimed to complement the theoretical material covered in class. They will require a serious time commitment on your part so do not plan to complete them within two days of the deadline. Each assignment will be graded and must be submitted in electronic form.

Grading Policy

- Final: 45%
- Midterm: 30%
- Assignments: 12.5% per problem set (25% overall).

If your score on the final is better than on the midterm, then the midterm does not count and its weight is automatically shifted towards the final. To pass the course you must obtain a grade of 70% or higher in either the midterm or the final. To obtain an A+/A/A- you must get a score of at least 90/85/80 on at least one of the exams (midterm or final). If you miss this condition, then your grade will be adjusted downward to the next GPA level. Example: Suppose you had 100% on both assignments and 80% on both midterm and final. The computed grade would be 85%, but since your best grade on an exam was 80%, your course grade will be 84%.

Appeals. If you appeal to re-grade one of the problem sets or exam questions, I will re-grade the *entire* problem set/exam. Note that this may lead to a lower overall grade. Your complaint has to be in writing and you must give a detailed outline as to why and where you think that the assessment is inaccurate.

Missing a Midterm: There are no “make-up”-tests — weight will automatically be shifted towards the final.

Not handing in an assignment problem set. If you miss the deadline for an assignment, you should contact me immediately. The rule is that your score gets reduced by 5% per late day.

Plagiarism is a severe academic offence. Please note the following disclaimer

“Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. The terms that apply to the University’s use of the Turnitin.com service are described on the Turnitin.com web site.”

By submitting a problem set you certify that you have read and understood the university’s policies on plagiarism. Please also consult the university’s website on academic writing: <http://www.utoronto.ca/writing/plagsep.html>.

If I detect plagiarism, I will go through the standard process for academic misconduct.

Further Information

Class Times: Thursdays 4-6pm
Room: GH100
My office: GH210
Office Hours: TBA
Phone St. George: 416 - 978 - 4189
Email: andreas.park@utoronto.ca
Course Webpage: on Blackboard.

I kindly ask you to respect my office hours.

Information about the Blackboard System

What follows is a copy of the university's official statement (not corrected for typographical errors).

Logging in to your Blackboard course website. Like many other other courses, ECO2503 uses Blackboard. To access the ECO2503 website, or any other Blackboard-based course website, go to the UofT portal login page at portal.utoronto.ca and login using your UTORid and Password. Once you have logged in to the portal using your UTORid and Password, you'll find the link to ECO2503 course website along with the link to all your other Blackboard-based courses.

Activating your UTORid and password. If you need information on how to activate your UTORid and set your password for the first time, please go to www.utorid.utoronto.ca. Under the "First Time Users" area, click on "activate your UTORid" if you are new to the University or "create your UTORid" if you are a returning student, then follow the instructions. New students who use the link to "activate your UTORid" will find reference to a "Secret Activation Key". This was originally issued to you when you picked up your T-card at the library. If you have lost your "Secret Activation Key" you can call 416-978-HELP or visit the Help Desk at the Information Commons on the ground floor of Robarts library to be issued a new one. **The course instructor will not be able to help you with this.** 416-978-HELP and the Help Desk at the information commons can also answer any other questions you may have about your UTORid and Password.

Email communication with the course instructor. At times, the course Instructor may decide to send out important course information via email. To that end, all UofT students are required to have a valid UofT email address. You are responsible for ensuring that your UofT email address is set up AND properly entered in the ROSI system. You can do that by using the following instructions:

To submit the information to activate your UTORid and Password (see above), you will need to click the “Validate” button. Follow the instructions on the subsequent screens to receive your utoronto.ca address. Once you have your UofT email address go to the ROSI system, (www.rosi.utoronto.ca) log in and update the system with your new institutional email address.

You can check your UofT email account from either

1. The UofT home page <http://www.utoronto.ca/> (Choose “quick links” - choose “myutoronto.ca” - enter your UTORid and Password - choose “webmail” Or
2. Via Outlook, Mozilla etc. Visit the helpdesk at the information commons for help with the set up.

Forwarding your utoronto.ca email to a hotmail, gmail, yahoo mail or other types of accounts is not advisable. In many cases, hotmail/gmail/yahoo automatically filters email from any utoronto.ca address into the junk mail folder. Therefore emails from your course instructor will end up in your junk mail folder.

You are responsible for:

1. Ensuring you have a valid UofT email address that is properly entered in the ROSI system;
2. Checking your UofT email account on a regular basis.

The official statement ends.

Literature

There are many excellent finance books available, but most are either geared towards an MBA/undergrad or towards a doctoral student audience. None of the books that I know of covers all the topics in this course. I have collected materials from several sources and I cannot in good conscience provide a unique textbook recommendation. Here are my recommendations as based on the topics that are covered. There is a rumour that past generations of students have assembled a folder that contains copies of all listed references. I cannot endorse copying this specimen.

For some topics, I will also ask you to read the original literature. These papers will be listed on Blackboard as we go.

1. BASICS. Use either

- Thomas Copeland and Fred Weston: *Financial Theory and Corporate Policy*, Addison-Wesley. Hereafter: CW. or
- Bodie, Kane, Marcus, Perrkakis, Ryan: *Investments*, 2006, McGraw-Hill.

These two texts are undergraduate textbooks in finance. They cover basic topics nicely. Both, especially CW, also give decent introductions to more advanced topics.

2. BOND PRICING.

- Elton, Gruber, Brown, Goetzmann: *Modern Portfolio Theory and Investment Analysis*, 2003, Wiley. Hereafter: Elton
A really nice text that has plenty of examples.

- David Luenberger: *Investment Science*, 1998, Oxford University Press. Hereafter: Luenberger.

This book is slightly below the level of this course, but it is useful for several topics, including bond pricing, portfolio theory and CAPM. It is aimed at students who have a math-oriented first degree.

3. RISK MANAGEMENT

- Basic concepts are explained in Elton; advanced topics will be covered with original work.

4. PORTFOLIO THEORY, CAPM, AND APT

- Basics can be studied from Luenberger, Elton, CW. Our approach will be based on matrix algebra and this is best explained in:
- Campbell, Lo and MacKinley: *The Econometrics of Financial Markets*, 1998, Princeton University Press. Hereafter: CLM.

Focuses mainly on empirics; sets up theoretical concepts so that they can be empirically tested; very comprehensive. Useful source to learn about empirical methods; it should be your first reference text when tackling the empirical problem sets.

5. GENERAL EQUILIBRIUM THEORY

- Basics are explained in CW.
- Darrell Duffie: *Dynamic Asset Pricing Theory*, 2001, Princeton University Press. Hereafter: Duffie.
My lecture on this topic is based on the first chapters of Duffie.

6. CONSUMPTION BASED ASSET PRICING.

- John Cochrane: *Asset Pricing*, 2001, Princeton University Press. Hereafter: JC.
A very nicely written book which also covers a great deal of empirical methods.

7. Financial Market Trading

- Joel Hasbrouck: *Empirical Market Microstructure* (Subtitle: The Institutions, Economics, Econometrics of Securities Trading), 2007, Oxford University Press.
This segment of the course will be based upon the first 6-7 chapters of this volume. Hereafter: Hasbrouck.
- Larry Harris: *Trading and Exchanges: Market Microstructure for Practitioners*, 2003, Oxford University Press.
This book is a nice read about trading terminology and mechanisms, but does not include the models that we discuss in class. If you do your internship in trading you may want to get this book.

Naturally, as the general public has a great interest in portfolio choice, there are many “popular science” books. In some case these authors explain complicated concepts better than textbooks. Prominent examples are

- Jeremy Siegel: *Stocks for the Long Run*, 2002, McGraw-Hill.
A modern classic for investors.
- Robert Shiller: *Irrational Exuberance*, 2000 (March), Princeton University Press.
The Guardian labelled him the “Party Pooper” – his book came out just months before the New Economy stock market bubble burst, when everything still seemed jolly-good. Shiller allegedly has planted the phrase Irrational Exuberance into Alan Greenspan’s mind (who famously used the phrase in a 1996 speech before congress).

There are several finance related movies that may be worth watching. The classic is “Wall Street” (and, some time this term, “The Return of Gordon Gecko”), but “Boiler Room”, “Trading Places” and “Barbarians at the Gates” are also worth watching.

Course Structure

The details of the course structure and of the topics covered will be displayed on the Blackboard system. Most (but not all) material is on slides.

In general, we will deal with two big questions: first, what determines economic agents' investment decisions, and second, how are financial assets priced, given agents' investment decisions. We will also discuss the role of information in portfolio choice and asset pricing. As subfields of finance, we will then cover the following topics:

- Individuals investment decisions under uncertainty and over time.
- Portfolio theory and asset pricing, in particular, general equilibrium theory and the Capital Asset Pricing model.
- Arbitrage Pricing Theory and Consumption Based Asset Pricing.
- Efficient capital markets and asset pricing with asymmetric information.
- Basics of financial market trading.

This translates into the following tentative schedule for our lectures:

Topic 1 Basics, Net Present Value, Internal Rate of Return CW Ch. 1,2. Luen Ch. 2, Duffie Ch. 1

Topic 2 Bond pricing, the yield curve, term structure of interest rates. Luen Ch. 3-5. Elton Ch. 20, 21.

Topic 3 Risk management: Utility, choice under uncertainty, expected utility, prospect theory, puzzles in choice under uncertainty. Luen Ch. 9, Elton 10, 11.
Measuring risk and risk aversion. Intertemporal choice, state-price density. JC Ch. 1-3. Luen Ch. 9.

Topic 4 Asset Allocation and Portfolio Choice; Markowitz's Mutual Fund Theorem. Luen Ch. 6, Elton Ch. 4-9, CLM Ch. 5.

Topic 5 CAPM. Luen Ch. 7-8, Elton Ch. 13-15, CLM Ch. 5,6

Topic 6 General Equilibrium, efficiency, state prices, the law of one price, arbitrage. Luen Ch. 9, Varian: "Principles of Arbitrage", *Journal of Economic Perspectives*, 1987; Duffie Ch. 1.

Topic 7 Arbitrage Pricing Theory and other multi-factor models. Elton Ch. 16, 24.

Topic 8 Consumption Based Asset Pricing, the equity premium puzzle ICAPM JC Ch. 1-9, CLM Ch. 8, Duffie Ch. 2.

Topic 9 Efficient Financial Markets. Elton Ch. 17, CLM Ch. 2, 4.

Topic 10 Organization of Market trading, market maker models, asymmetric information. Hasbrouck, Ch. 1-6.