



Syllabus for Foundations of Finance Summer Semester 2012-2013 Tentative

1. Instructor

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Course website: Blackboard (<http://sternclasses.nyu.edu>)

Office Hours: Monday 9:00pm-10:00pm; Thursday 4:30pm-5:30pm; Saturday 4:00pm-5:00pm

2. Teaching Assistant

The teaching assistant is Aaditya Muthukumar (amuthuku@stern.nyu.edu). His office hours will be arranged later. He will also conduct three review sessions (after class 2, before midterm and final exams). Place and time of the exam review sessions will be announced in class.

3. Class Time

The Saturday class meets once a week and the Monday and Tuesday classes meet twice a week, at times indicated in schedules.

Classroom Civility. Your behavior should respect your classmates' desire to learn. Each lecture begins exactly at 9:00a.m. (6:00 p.m.) and ends exactly at 4:00 p.m. (9:00 p.m). I understand your busy schedules, but try not to come late. Because of the classroom layout, it is disruptive no matter how quiet you are. If you carry a cell phone or any other type of 'audible alert device', turn it off before entering class. Do not engage in side conversations during the lecture. If you must come late, please let me know beforehand.

4. Readings

The most useful readings for the class are [class notes](#) (to be distributed during the first session).

The textbooks for this class (not required though highly recommended if you plan to have a career in finance or related subject) are:

[1] "Investments" by Zvi Bodie, Alex Kane, Alan J. Marcus, 9th edition

[2] Solutions Manual to "Investments" by Zvi Bodie, Alex Kane, Alan J. Marcus, 9th edition

[3] Selected Materials from "Essentials of Corporate Finance" by Stephen A. Ross, Randolph W. Westerfield, Bradford D. Jordan, 5th edition

You will mainly use [1], abbreviated BKM below. If you have an earlier edition of BKM (fifth, sixth, seventh, or eight), you are fine. There are only minor changes between editions. Page and chapter numbers may vary slightly, but this is hardly a reason to buy a new copy.¹

The main role of the textbooks is to serve as a source based on which you can review the material. BKM is at times very good and tightly linked to the material I cover, but a bit weaker and less related to the material I cover in class on some other topics. That being said, it is currently the best book on the market for our purposes, and you may find it useful to prepare before class and go over the material after class.

Book [2] will come in handy to solve practice questions. We will only use chapters 4 and 5 from book [3], abbreviated RWJ. You can purchase [2] and [3] online on the publisher's website.

The link to access book [2] (costs around \$20) is:

<https://create.mcgraw-hill.com/shop/#/catalog/details/?isbn=9780390169563>

The link to access book [3] (costs around \$15) is:

<https://create.mcgraw-hill.com/shop/#/catalog/details/?isbn=9780390169501>

You can also purchase the entire set of books at the bookstore (prices might be different though).

Staying Up-to-Date. You are encouraged to follow financial and macroeconomic news in the Financial Times, Wall Street Journal, or The Economist. Alternatively, Bloomberg or CNBC channels are good knowledge boosters. If you encounter an interesting article that you would like to share with the class, send me an email and I will post it on the class site.

5. Calculator

You will need a calculator for this class. It is a distinct advantage to have a financial calculator, but not an absolute requirement. If you plan to take other finance classes, you will get good use out of a financial calculator anyways. Standard financial calculators include the HP 12C (costs about \$70), the HP 10B-II (costs about \$30) and the TI BA-II Plus (costs about \$30). You are expected to learn how to operate the calculator on your own. However, you can get help by attending the teaching assistants' review sections (after class 2) or his office hours.

6. Communication

The class web site will be posted on Blackboard at <http://www.sternclasses.nyu.edu/>. This is the central location where all teaching materials are posted. Class announcements will be posted here. Problem sets will be posted there as well. Solutions to the problem set will be posted no later than one week after the due date; they will not be distributed in paper form in class. The class website will also contain the suggested problems, and some finance links and articles.

¹ If you already own the "Essentials of Investment" textbook by the same authors instead, you will have more difficulty finding the corresponding chapters, sections, and exercise numbers because they are all different. You may want to upgrade to the "Investments" book.

7. Exams and Assignments

Grades will be based on the final exam (40 percent), the midterm exam (30 percent), and three problem sets (30 percent). The Stern finance department follows a strict grading curve for graduate core courses (see finance department web site). I am required to strictly adhere to this curve. The finance curve for core courses is: A (10%), A- (15%), B+ (15%), B (40%), B- (15%), C (5%).

Honor Code. You are responsible for maintaining Stern's Honor Code which mandates zero tolerance for cheating and plagiarism. Violations of the honor code will be prosecuted with a minimum penalty of failure for the course, as required by code of conduct rules. If you become aware of any violations of the honor code you must take whatever steps are necessary to stop the violators. Per request of the Dean, you must include a signed statement at the top of each problem set and exam, indicating that you adhere to the honor code. The statement is: 'I pledge my honor that I have not violated the Stern Honor Code in the completion of this exam/problem set.' It is in your best interest that the market place knows that Stern takes honesty seriously; it adds to the value of your degree.

Exams. The midterm and final exams test your understanding of the key concepts in the class. They do not test your ability to memorize or to use your calculator. Rather they probe your deeper understanding of the material. As a result, they may be more challenging than the exams you are used to. To prepare for these exams, you should review the slides together with your own class notes, the required readings, the problem sets, the sample exams, and preferably the suggested problem sets and suggested readings. The final exam is cumulative.

You will be allowed one double-sided page of notes at the midterm exam and two double-sided pages of notes at the final exam. The sheets must be no larger than 8.5 inch by 11 inch. There are no restrictions on the content of the formula sheets, except that you are not allowed to reprint my power point slides verbatim. You will be asked to turn in these formula sheets after the midterm and final exams, but you will be able to recover the midterm sheet in the week after the midterm. No laptops and palm pilots are allowed on the exams.

Problem Sets. There will be **three** problem sets over the course of the semester. For each problem set, you will be rewarded full credit if you have made a good-faith effort to answer all of the questions and if you hand in the problem set on time. Late problem sets will not be accepted. Answers to the problem set must be your own. You are encouraged to acknowledge any help you received on the front page of your problem set solution. The homework questions will be in the same spirit of the exam questions, but slightly easier. The reason is that they are your first confrontation with the implementation of the material.

Suggested Problems. The course pack also includes a set of concept problems and the list of suggested problems from the book. These questions are intended to give you extra practice over and above the homework. You do not have to turn them in, and there is no credit for them. Practice makes perfect: You are strongly encouraged to take the suggested problems seriously.

Study Groups. It is highly recommended that you regularly review the readings and class notes in a study group. Don't wait until exam time to set up such a study group. By then it's too late.

You are encouraged to work on the problem sets with your study group, but you must hand in your own answers.

8. Course Content

Content. The course is a rigorous, quantitative introduction to financial market structure and financial asset valuation. The main topics of the course are arbitrage, portfolio selection, equilibrium asset pricing (CAPM), fixed income securities, and derivative pricing. There is a small section on project valuation.

You are expected to understand valuation formulas and be able to apply them to new problems. The appropriate tools necessary for solving these problems will be developed at each stage and practiced in the homework assignments. The models we will cover have immediate applications and implications for real-world financial decisions. Every effort will be made to relate the course material to current financial news.

Prerequisites. Students must be comfortable with statistics, linear algebra, calculus, and microeconomics. Students are strongly encouraged to study the review handout on statistics at the beginning of the semester (Handout will be posted on website). Alternatively or additionally, the Quantitative Review in Appendix A of BKM will help you through refresh the statistics material.

Detailed Outline. Below is a schedule with topics for the course. Classes are divided into lectures although sometimes more than one lecture may be covered during one class session. Likewise, one lecture may occasionally take longer than one class session. Required readings are indicated as RR, suggested readings as SR.

Lecture 1: Financial Instruments and Financial Markets

Overview of class RR: Syllabus

Financial Instruments RR: BKM 1.1-4, 2.1-3, 2.5 SR: BKM 1.5-7, 2.4, 4.1-2

Financial Markets RR: BKM 3.1-3, 3.5-7 SR: BKM 3.4, 3.8

Lecture 2: Time Value of Money

PV, FV, annuities, perpetuities RR: RWJ 4, 5.1-2

Lecture 3: Performance of Securities

Compounding and Return measures RR: RWJ 5.3-4, BKM 5.2, 5.4-5 SR: BKM 5.1, 5.3

Lecture 4: Portfolio Theory

Positions and Portfolio Returns RR: BKM 5.5, BKM 6.2 SR: BKM 5.6-10

Optimal Portfolios and Investor Preferences RR: BKM 6.1

Efficient and Optimal Portfolios with Riskless Asset RR: BKM 6.2-6, 7.3

Efficient Portfolios with Two Risky Securities RR: BKM 7.1-2

Efficient and Optimal Portfolios w/ Multiple Risky Assets RR: BKM 7.3-4, 8.1-4 SR: BKM 7.5

Lecture 5: Capital Asset Pricing Model

The Capital Asset Pricing Model RR: BKM 6.6, 8.5, 9.1-2

Applications of the CAPM RR: BKM: 10.1-2 SR: BKM 9.3-6

Beyond the CAPM RR: BKM: 9.3, 10.1, 10.5, 13.1-3 SR: BKM 10.2-4, 13.3-6

Lecture 6: Arbitrage

Arbitrage and the Law of One Price RR: BKM 10.1-10.6

Lecture 7: Midterm exam: Lecture will follow thereafter.

Lecture 8: Equity Valuation

Dividend Discount Model and Valuation Ratios RR: BKM 18.1-4 SR: BKM 18.5-6 BKM 17, 19

Lecture 9: Fixed Income Securities

Bond Prices and Yields RR: BKM 14.1 – 4 SR: BKM 14.5

Forward Rates and Yield Curve Theories RR: BKM 15.1-6

Managing Bond Portfolios RR: BKM 16.1-3 SR: BKM 16.4

Lecture 10: Options

Options Basics and Strategies RR: BKM 20.1-3

Options Strategies and Minimum Value RR: BKM 20.3-4, 21.1-2 SR: BKM 20.5-7

Black-Scholes Option Pricing Formula RR: BKM 21.3-5 SR: BKM 21.6

Final exam in class TBA