

Syllabus Foundations of Finance

Fall Semester 2014

COR1-GB.2311.31

FINC-UB.0002.03

FINC-UB.0002.04

1 Instructor

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2 Teaching Assistant

The teaching assistant for this class is Matteo Crosignani

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Office Hours: Monday 5:30-6:30pm and Friday 1:30-2:30pm

3 Class Time

COR1-GB.2311.31 meets Tuesdays 6-9pm in KMEC 3-110.

FINC-UB.0002.03 meets Tuesdays and Thursdays 8-9:15am in Tisch 200.

FINC-UB.0002.04 meets Tuesdays and Thursdays 9:30-10:45am in Tisch 200.

There are no classes on 3/18 or 3/20.

Classroom Civility Your behavior should respect your classmates desire to learn. Each lecture begins and ends on time. I understand your busy work 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. Repeated occurrence of such disruptions will be reflected in the final grade. If you must miss a class or must come late, please let me know by email beforehand.

Students with Disabilities If you have a qualified disability and will require academic accommodation during this course, please contact the Moses Center for Students with Disabilities (CSD, 998-4980) <http://www.nyu.edu/csd/> and provide me with a letter from them verifying your registration and outlining the accommodations they recommend. If you will need to take an exam at the CSD, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation.

4 Readings

The main class material is the course pack which I will hand out in the first class. All of this material will also be available on the class Blackboard. The course pack contains all powerpoint slides that I use in class, handouts with important material covered in class, problem sets, and practice exams.

The textbook corresponding to the suggested readings are given below. *NOTE: the textbook is NOT required. Some people find the textbook helpful and some people do not. Read the description below before you decide on whether you feel it would be worth it for you to buy the textbook.*

- 1 “Investments” by Zvi Bodie, Alex Kane, Alan J. Marcus, 9th edition (ISBN: 9780390169600)
- 2 “Solutions Manual to accompany Investments” by Zvi Bodie, Alex Kane, Alan J. Marcus, Alan Marcus, 9th edition (ISBN: 9780390169563)
- 3 Selected Materials from “Essentials of Corporate Finance” by Stephen A. Ross, Randolph W. Westerfield, Bradford D. Jordan, 6th edition (ISBN: 9780390169501)

We will mainly use [1], abbreviated BKM below. If you have an *earlier edition* of BKM (sixth, seventh, or eighth), 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. If you use an older edition it is your responsibility to find out the differences with the latest edition.¹ The main role of the textbooks is to serve as a source where you can review the

¹If 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.

material. At times BKM is very good and tightly linked to the material I cover. However, for other topics the link to the material I cover in class is a bit weaker. That being said, it is currently the best book on the market for our purposes, and some students find it very useful for preparing before class and reviewing 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. These two chapters come as a *supplement* in the class material packet if you purchased your class material through the bookstore. The supplement [3] will only be used in a few classes (indicated below). If you did not buy [1] through the bookstore, you can purchase [2] and [3] separately on the publisher's web site.²

Staying Up-to-Date You are encouraged to follow financial and macroeconomic news in the Financial Times, Wall Street Journal, or The Economist. 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 web site. On our NYU Classes site I will post some links to recent articles in the financial press that complement the lectures.

5 Calculator

You need a calculator for this class. It is a distinct advantage to have a **graphing** calculator (sometimes also called an engineering calculator) or 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, I have included some useful slides in the course pack on how to work with the calculator. You can also ask the teaching assistant for help.

6 Communication

The class site is on NYU Classes at <https://newclasses.nyu.edu/>. This is the central location where all teaching materials are posted. TA office hours and class announcements will be posted here. Problem sets are 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 web site also contains the concept questions (see below), suggested problems, and some finance links and articles.

²Go to <https://create.mcgraw-hill.com/shop/>. Enter the ISBN number given above. The booklets are found under "Professor Stijn van Nieuwerburgh"'s name. Item [2] is \$19.05. Item [3] is \$14.63.

7 Exams and Assignments

Grades will be based on the final exam (40 percent), the midterm exam (30 percent), problem sets (20 percent), and participation (10 percent). The Stern Finance Department follows a grading curve, which I must generally follow.

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 handouts (at the end of the course pack), the concept questions, the readings, the problem sets, the sample exams (located in your course pack behind the homework), and preferably also the suggested problems. 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 powerpoint slides. You will be asked to turn in these formula sheets after the midterm and exam, but you will be able to recover the midterm sheet in the week after the midterm.

You are not allowed to take the exam questions home, and no written answers will be provided. There will be a post-midterm discussion. Once graded, you are allowed to come visit your midterm in my office, during office hours or by appointment. The same rules apply to the final. No laptops nor palm pilots are allowed on the exam.

Concept Questions After every class, concept questions are posted on Classes under *Concept Questions*. The concept questions test your understanding of the main concepts taught in the class of that day. Usually, there are between 3 and 10 multiple choice questions per test. After you have reviewed the material from class, it should not take you long (no more than 15 minutes) to complete these concept questions. The concept questions are a good warm-up for starting to practice solving problems on the material. They help to reinforce the material and make sure you do not fall behind. I will not keep track of whether

or not you answered the questions correctly and they are **not** part of your grade. They are there purely for your benefit. Detailed solutions to the concept questions are also posted on our NYU Classes site.

Problem Sets There will be 4 problem sets over the course of the semester. Each problem set contains 1 excel question, emphasizing a practical implementation of a concept. The problem sets are graded on a 5 point scale (between 0 and 5). Late assignments will either not be accepted or will incur a grade penalty unless due to documented serious illness or family emergency. Exceptions to this policy for reasons of religious observance or civic obligation will only be made available when the assignment cannot reasonably be completed prior to the due date and you make arrangements for late submission in advance. *You are allowed to work in groups on the problems, but you must write up and hand in your own copy* and you are asked to acknowledge any help you received on the front page of your copy. *Do not just print two copies of the same writeup.* This is for your benefit, since being forced to write up the problems will give you added familiarity and comfort with the material. The homework questions will be in the same spirit of the exam questions, but slightly easier. After all, they are your first encounter with the implementation of the material.

Suggested Problems Suggested problems are posted on NYU Classes. These questions are intended you give you extra practice over and above the homework. You do **not** have to turn them in, and there is no credit for them. You can look up solutions in your solution manual [2]. The solutions to the questions in the RWJ booklet (class 2) are included in your course pack. **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 and Class Schedule

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.

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 **H9**); the handouts are located at the end of your course pack). You can also look at the Quantitative Review in appendix A of BKM to help you review the statistics material.

Detailed Outline Below is a detailed schedule of the date and topic of each class. The main readings that go with the class are indicated by MR. The readings starting with 'H' are handouts, situated at the end of your course packet. Some of the handouts are pure review. Others go beyond the material covered in class. You will be responsible **only** for material covered in the lectures and on the homeworks. Therefore, if you find that a particular handout is not helpful to you, you can skip it. Homework due dates are also mentioned.

Dates below are for $\left[T \text{ 6} - 9pm \text{ section} \mid T - Th \text{ 8} - 9 : 15am \text{ and } 9 : 30 - 10 : 45am \text{ sections} \right]$

Topic 1: Financial Instruments and Markets $\left[2/11 \mid 1/28, 1/30 \right]$

Overview of class MR: Syllabus
 Financial Instruments MR: BKM 1.1-4,
 Financial Markets MR: BKM 3.1-3, 3.5, 3.7, H1

Topic 2: Performance of Securities $\left[2/18 \mid 2/4, 2/6 \right]$

PV, FV, annuities, perpetuities MR: RWJ 4, 5.1-2, H2-3
 Compounding and Return measures MR: RWJ 5.3-4
 MR: BKM 5.2, 5.4-6, H4-8

Statistics Review $\left[N/A \mid 2/11 \right]$ MR: H9

Topic 3: Portfolio Theory $\left[2/25 \mid 2/13, 2/18 \right]$

Positions and Portfolio Returns MR: H9-12, BKM 6.2
 Efficient Portfolios with Two Risky Assets MR: BKM 7.1-2, H13-14
 Optimal Portfolios and Investor Preferences MR: BKM 6.1

Homework 1 is due in class. $\left[2/25 \mid 2/13 \right]$

Topic 4: Portfolio Theory $\left[3/4 \mid 2/20, 2/25 \right]$

Efficient and Optimal Portfolios with Riskless Asset
and with Multiple Risky Assets
Introduction to Capital Asset pricing Model

MR: BKM 6.2-6, 7.3
MR: BKM 7.3-4, 8.1-4
MR: BKM 9.1, H15-16

Topic 5: Capital Asset Pricing Model $\left[3/11 \mid 2/27, 3/4 \right]$

The Capital Asset Pricing Model
Applications of the CAPM

MR: BKM 6.6, 8.5, 9.1-2
MR: BKM: 10.1-2, RWJ 8.1, 8.4, H17

Homework 2 is due in class. $\left[3/11 \mid 2/27 \right]$

Review $\left[N/A \mid 3/6 \right]$

Midterm $\left[3/25 \mid 3/11 \right]$

Midterm exam in class.

Topic 6: Arbitrage $\left[3/25 \mid 3/13 \right]$

Arbitrage and the Law of One Price (70 mins)

MR: H18

Topic 7: Equity Valuation $\left[4/1 \mid 3/25, 3/27 \right]$

Dividend Discount Models and Valuation Ratios
Discuss Midterm (20 mins)

MR: BKM 18.1 – 4, H19-20

Topic 8: Fixed Income Securities $\left[4/8 \mid 4/1, 4/3 \right]$

Bond Prices and Yields
Yield Curve and Forward Rates

MR: BKM 14.1 – 4, H21-22,
MR: BKM 15.1-6, H23-25

Topics 8 and 9: Fixed Income Securities and Options $\left[4/15 \mid 4/8, 4/10 \right]$

Duration and Immunization

MR: BKM 16.1-2, H26-27

Options Basics and Strategies MR: BKM 20.1-3, H28

Homework 3 is due in class. $\left[4/15 \mid 4/8\right]$

Topic 9: Options $\left[4/22 \mid 4/15, 4/17\right]$

Options Strategies and Minimum Value
Black-Scholes Option Pricing Formula

MR: BKM 20.3-4, 21.1-2, H29-30
MR: BKM 21.3-5

Topics 10 and 11: Futures and Market Efficiency $\left[4/29 \mid 4/22, 4/24\right]$

Futures MR: BKM 22.1, 22.3-5, 23.2, 23.5, H31
Market Efficiency MR: BKM 11

Homework 4 is due in class. $\left[4/29 \mid 4/24\right]$

Topic 12: Behavioral Finance $\left[N/A \mid 4/29, 5/1\right]$

Materials to be distributed.

Review $\left[N/A \mid 5/6, 5/8\right]$

Final $\left[5/6 \mid TBD\right]$

Final exam in class.