

# Syllabus Foundations of Finance

Fall 2019

FINC-UB.0002.02

FINC-UB.0002.03

COR1-GB.2311.10

## 1 Instructor

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## 2 Teaching Assistants

The teaching assistants for this class are Sung Lee and Jack Shim (contact either)

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Offices: KMEC 9-175E (Sung) and 9-193G (Jack)

Office Hours: Tue 4:30-6pm and Wed 2-3:30pm (Sung) and Thurs 12-1:30pm (Jack) or by appt

## 3 Class Time

FINC-UB.0002.02 meets Mon and Wed at 9:30-10:45am

FINC-UB.0002.03 meets Mon and Wed at 11am-12:15pm

COR1-GB.2311.10 meets Mon at 6-9pm

**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. Likewise, no laptops or iPads are permitted. 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 **and more** will also be available on NYU Classes. 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: these textbooks are NOT required. Some people find the textbooks helpful and some 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, 11<sup>th</sup> edition
- 2 “Solutions Manual to accompany Investments” by Zvi Bodie, Alex Kane, Alan J. Marcus, Alan Marcus, 11th edition
- 3 Selected Materials from “Essentials of Corporate Finance” by Stephen A. Ross, Randolph W. Westerfield, Bradford D. Jordan, 6<sup>th</sup> edition

We will mainly use [1], abbreviated BKM below. If you have an *earlier edition* of BKM, 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.<sup>1</sup> The main role of the textbooks is to serve as a source where you can review the

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<sup>1</sup>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.

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).

**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.

## 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 **old-school** financial calculators include the HP 12C, the HP 10B-II, and the TI BA-II Plus. **These are kind of old but they do the job. You are free to buy any one, but you are expected to learn how to operate the calculator on your own.** However, I have included some useful slides **at the very end of the slides section** in the course pack on how to work with these calculators.

## 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. **Any changes in TA office hours and class announcements will be posted here. Problem set solutions will be posted there as well; they will not be distributed in paper form in class.**

The class web site also contains the concept questions (see below), suggested problems from the BKM text, and some finance links and articles as they come up.

## 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 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 marketplace 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. (They are not like high school exams where only 90%+ is a good grade!) 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* with an emphasis on the post-midterm material.

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 the TAs' office during office hours or by appointment. The same rules apply to the final. No laptops, iPhones, etc. are allowed on the exam.

**Concept Questions** 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. Some problem sets contain an 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 be made available only 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 of three or fewer 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 multiple 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, since they are your first encounter with the implementation of the material.

**Suggested Problems** Suggested problems are posted on NYU Classes and in the course packet. 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. 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. You are encouraged to work on the problem sets with your study group, but you must hand in your own answers, as noted above.

## 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. At appropriate points we will 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 order and topics of each class. The main readings that go with the class are indicated by MR. **The chapter links below are based on the 9th Edition of BKM; because they rearrange the content trivially with each edition, any required revisions to connect the chapters to the 11th Edition will be in a syllabus supplement provided on Classes. The readings starting with 'H' are handouts, found at the end of your course packet. Some of the handouts are pure review. Others go beyond the material covered in class. You are 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 and exam dates will be determined based on class progress.**

Topic 1: Financial Instruments and Markets

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

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

Topic 3: Portfolio Theory

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*

Topic 4: Portfolio Theory

Efficient and Optimal Portfolios with a Riskless Asset	MR: BKM 6.2-6, 7.3
and with Multiple Risky Assets	MR: BKM 7.3-4, 8.1-4
Introduction to Capital Asset pricing Model	MR: BKM 9.1, H15-16

Topic 5: Capital Asset Pricing Model

The Capital Asset Pricing Model	MR: BKM 6.6, 8.5, 9.1-2
Applications of the CAPM	MR: BKM: 10.1-2, RWJ 8.1, 8.4, H17

*Homework 2*

Review class

Midterm

*Midterm exam in class.*

Topic 6: Arbitrage

Arbitrage and the Law of One Price

MR: H18

Topic 7: Equity Valuation

Dividend Discount Models and Valuation Ratios

MR: BKM 18.1 – 4, H19-20

Topic 8: Fixed Income Securities

Bond Prices and Yields

MR: BKM 14.1 – 4, H21-22,

Yield Curve and Forward Rates

MR: BKM 15.1-6, H23-25

Topics 8 and 9: Fixed Income Securities and Options

Duration and Immunization

MR: BKM 16.1-2, H26-27

Options Basics and Strategies

MR: BKM 20.1-3, H28

*Homework 3*

Topic 9: Options

Options Strategies and Minimum Value

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

Black-Scholes Option Pricing Formula

MR: BKM 21.3-5

Topic 10: Futures and Swaps

Futures

MR: BKM 22.1, 22.3-5, 23.2, 23.5, H31

Topic 11: Market Efficiency and Investment Management

Market Efficiency MR: BKM 11

*Homework 4*

Review class

Final

*Final exam dates TBD by registrar.*