Foundations of Finance
Spring 2018
COR1-GB.2311.30/31

Instructor: Prof. Robert Richmond

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Office hours	See course website, or by appointment

Teaching Assistant: The TA's information, including office hours, is posted on the class website. Any questions regarding the problem sets should be addressed to the TA.

Class time: The class meets once week on Tuesday (Section 31) or Wednesday (Section 30), from 6:00pm to 9:00pm. There will be a 15 minute break in the middle of class. Section 30 meets in KMC 1-70 and section 31 meets in KMC 3-90. All exams are held in class at the scheduled class time. You must take exams during the scheduled time of the section which you are registered for.

Important dates: Please see the course schedule at the end of the syllabus.

Content: The course is a rigorous, quantitative introduction to financial market structure and financial asset valuation. The main topics of the course are the time value of money, portfolio selection, equilibrium asset pricing (CAPM), arbitrage pricing, fixed income securities and derivatives. There is also a short 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. I will emphasize how the course material relates to current financial events.

1

Prerequisites: To succeed in this class, you must be comfortable with statistics, calculus, and microeconomics. You are strongly encouraged to study the review handout on statistics (Handout 0 in the course pack) at the beginning of the semester. Alternatively or additionally, the Quantitative Review in Appendix A of BKM will help you refresh the statistics material.

Reading materials: The main class material is in the course pack that I will hand out in the first class. It contains all slides that I use in class, the technical notes (TN) for some lectures, handouts with important material covered in class, problem sets, and practice exam questions. You will want to take notes during class because I will fill in the slides with additional material; space is available next to the slides and on the left page. I will post my annotated slides on the course website after each lecture.

The other texts for the course are:

1. "Investments" by Zvi Bodie, Alex Kane, Alan J. Marcus, 10th edition;

2. "Student Solutions Manual to accompany Investments" by Zvi Bodie, Alex Kane, Alan J. Marcus, Alan Marcus, 10th edition;

3. Selected material from "Essentials of Corporate Finance" by Stephen A. Ross, Randolph W. Westerfeld, Bradford D. Jordan, 6th edition.

Most of our material is covered in [1], abbreviated BKM below. If you have a different edition of BKM (9th, 8th, or 7th), you are fine, there are only minor changes between recent editions. However, page and chapter numbers may vary. If you use an edition other than the 10th, it is your responsibility to find out the differences with the 10th edition. The solution manual [2] will come in handy when doing practice problems. The material in [3], abbreviated RWJ, is covered only in class 2, and we will only use chapters 5 and 6. These two chapters are included with the course materials available from the NYU bookstore. If you did not buy your materials through the bookstore, you can purchase [3] separately on the publisher's web site. (Go to https://create.mheducation.com/shop/#/catalog/details/?isbn=9780390169501.)

The textbooks are your source to review the material. BKM is often very good and tightly linked to what we will cover, but at other times the link is weaker. That said, it is currently the best book on the market for our purposes, and you will likely find it useful to prepare before class and to go over the material after class. While it is possible to succeed in this class without the textbooks, I recommend reading them.

Staying up to date: You should also follow financial and macroeconomic news in publications suchs as Financial Times, Wall Street Journal, Bloomberg, or The Economist. If

you run across an interesting article that you would like to share with the class, send me an email and I will post it on the class website.

Calculator: You need a calculator for this class. Make sure your calculator can handle logarithms and exponentials. It is an advantage to have a financial calculator, but not a requirement. (If you plan to take other finance classes, you will get good use out of a financial calculator.) Please bring your calculator to class.

Standard financial calculators include the HP 12C (costs about $60), the HP 10B–II (costs about $25) and the TI BA–II Plus (costs about $30). You are expected to learn how to operate the calculator on your own. You can ask the TA if you have any questions. I have also included some slides in the course pack on how to work with a financial calculator.

Some homework problems will require you to use Excel. Every student of Stern is expected to be comfortable with Excel. In particular, any Finance Area major is expected to have knowledge of Excel that extends beyond familiarity to awareness of the uses and limitations of this technology.

Communication: The class website is on NYU Classes at https://newclasses.nyu.edu/. This is the central location containing all teaching materials. Class announcements will be posted here. Solutions to each problem set will be posted after the due date; solutions will not be distributed in class. The class website also contains concept questions (see below), suggested problems, and some finance-related links and articles.

There is a discussion board where the TA and I will answer your questions on a regular basis. Please do not e-mail me about questions regarding the class notes, problem sets, or related materials. Instead, post the question on the message board of the class site and we will respond there. That way the entire class benefits from the question. You are encouraged to answer each others' questions. Participating on the discussion board will reflect positively in your class participation grade.

Grades: Grades will be based on:

- Midtern (30 percent)

- Final Exam (45 percent)

- 3 problem sets (20 percent)

- Class participation (5 percent)

Class participation is strongly encouraged.

At NYU Stern, we strive to create courses that challenge students intellectually and that meet the Stern standards of academic excellence. To ensure fairness and clarity of grading, the Stern faculty have adopted a grading guideline for core courses with enrollments of more than 20 students in which a maximum of 35% of students will receive an "A" or "A-" grade.

Classroom civility: Respect your classmates. Each class starts and ends on time. Please do not to arrive late. Turn off cellphones and other audible devices before entering class. Laptop usage is highly discouraged and should only occur in the back row of the class. Do not engage in side conversations. Repeated class disruption will affect your grade.

Students are also expected to maintain and abide by the highest standards of professional conduct and behavior. Please familiarize yourself with Stern's Policy in Regard to In-Class Behavior & Expectations[1] and the NYU Disruptive Behavior Policy[2].

Academic integrity: Integrity is critical to the learning process and to all that we do here at NYU Stern. As members of our community, all students agree to abide by the NYU Stern Student Code of Conduct, which includes a commitment to:

- Exercise integrity in all aspects of one's academic work including, but not limited to, the preparation and completion of exams, papers and all other course requirements by not engaging in any method or means that provides an unfair advantage.

- Clearly acknowledge the work and efforts of others when submitting written work as one's own. Ideas, data, direct quotations (which should be designated with quotation marks), paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.

- Refrain from behaving in ways that knowingly support, assist, or in any way attempt to enable another person to engage in any violation of the Code of Conduct. Our support also includes reporting any observed violations of this Code of Conduct or other School and University policies that are deemed to adversely affect the NYU Stern community.

The entire Stern Student Code of Conduct applies to all students enrolled in Stern courses and can be found here: http://www.stern.nyu.edu/uc/codeofconduct. Violations of the Code of Conduct will be prosecuted with a minimum penalty of failure for the course, as required

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[1]http://www.stern.nyu.edu/portal-partners/current-students/undergraduate/resources-policies/academic-policies/index.htm

[2]http://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/bullying–threatening–and-other-disruptive-behavior-guidelines.html

by code rules. If you become aware of any violations of the 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 Code of Conduct. The statement is: *"I pledge my honor that I have not violated the NYU Stern Student Code of Conduct in the completion of this exam/problem set."* It is in your best interest that potential employers know that Stern takes honesty seriously. Stern's reputation adds to the value of your degree.

Students with disabilities If you have a qualified disability and will require academic accommodation of any kind during this course, you must notify me at the beginning of the course and provide a letter from the Moses Center for Students with Disabilities (CSD, 998-4980, http://www.nyu.edu/csd) 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.

Exams: The exams test your understanding of the key concepts in the class. The final exam is cumulative.

The exams do not test your ability to memorize or to use your calculator. 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 textbook readings, the problem sets, the sample exam questions, and preferably the suggested problem sets and suggested readings.

You will be allowed one double-sided page of notes for the midterm and two for the final. The sheets must be no larger than 8.5 inches by 11 inches. There are no restrictions on the content of the formula sheets, except that you are not allowed to reprint my slides verbatim. You will be asked to turn in these formula sheets after the exams.

You are not allowed to take the exam questions home, and no written answers will be provided. Once graded, you can come see your exam in my office during office hours, or by appointment.

If you cannot make the exam in your assigned section, you can email me and (space constraints permitting) sit the exam with the other section. If you cannot make either section, for the midterm, you can choose to have the final exam count 75%.

If you believe your exam has not been graded fairly, you have the right to make a formal

appeal. In this case, you will need to submit a written explanation of the issue and a proposed solution. The written explanation must be submitted within one week of the exam being graded. The teaching fellow and I will then determine whether a grade adjustment is appropriate. Additionally, we reserve the right to regrade the entire exam.

Class Recording: I will try to make sure that every class is recorded. This is NOT a replacement for attending class on a regular basis, but should allow you to review key materials, and to keep up with the class in case you are absent.

Concept questions: The course pack includes around 100 concept questions. The concept questions test your understanding of the key ideas covered in class on that day. After you have reviewed the material from class, it should take you no more than 2 minutes on average to complete every question. The concept questions are not graded, but are good preparation for the exam and a useful tool for keeping up with the material. I very strongly encourage you to complete them.

The solutions to the concept questions will be posted online.

Problem sets: There will be 3 problem sets over the course of the semester. Each problem set contains an Excel question, emphasizing a practical implementation of a concept from class. The problem sets are graded on a 5-point scale.

You are encouraged to work in groups on the problems, but you must hand in your own write-up. Acknowledge any help you received on the front page of your submission. They are meant to help you begin to apply the tools developed in class.

Late problem sets are not accepted. The problem sets are due by the end of class on the scheduled dates. If you cannot attend the class when a problem set is due, either have a classmate turn it in for you or e-mail me and the TA a copy before the class begins.

Suggested problems: Suggested problems are posted on the website. 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 the solution manual [2]. The solutions to the questions in the RWJ booklet are included in the course material from the bookstore. Solving lots of practice problems is key in this class. I encourage you to not immediately look at the solutions to the problems. Most successful students work out their own solution and then check it against the solutions manual.

Study groups: I highly recommend that you regularly review the class material in your study group. Do not wait until exam time to meet with your group. By then it will be too

late. Remember to hand in your own answers to the problem sets.

Course schedule: Below is a detailed schedule for the class. Handouts are marked "H" and technical notes are market "TN" (they can be found in the course pack). Note the homework due dates.

COR1-GB.2311   Foundations of Finance   Prof. Robert Richmond

Spring 2018

Class	Date	Topics	Description	Main Reading	Suggested Reading	Homework
1	T 6-Feb	Financial Instruments	Course overview; financial instruments	Syllabus; BKM 1.1-4	BKM 1.5-7, 2	
	W 7-Feb	Financial Markets	Financial Markets	BKM: 3.1-8		
2	T 13-Feb	Performance of Securities	Present and future value, annuities, perpetuities	RWJ 4, 5.1-2; H 1-2	TN 1	
	W 14-Feb		Compounding and measuring returns	RWJ 5.3-4; BKM 5.1-2, 5.4; H 3-5, 14	BKM 5.3, TN 2	
3	T 20-Feb	Portfolio Choice I	Portfolio choice and portfolio returns; Efficient portfolios with two risky securities	BKM 5.5, 7.1-2, 6.1-2; H 6-9	TN 3	
	W 21-Feb		Efficient portfolios with two risky securities; Optimal portfolios and investor preferences			**HW 1 Due**
4	T 27-Feb	Portfolio Choice II	Efficient and optimal portfolios with a riskless asset	BKM 6.3-5, 7.3-4		
	W 28-Feb		Efficient and optimal portfolios with multiple risky assets; Introduction to the Capital Asset Pricing Model	BKM 8.5, 9.1; H 10-11		
5	T 6-Mar	CAPM	The Capital Asset Pricing Model	BKM 9.1-2; H 12	BKM 6.6	
	W 7-Mar	CAPM	Applications of the CAPM; Beyond the CAPM	BKM 13.1,13.3	BKM 9.3	
6	T 20-Mar	**Midterm Exam**	In-class (90 min)			
	W 21-Mar	Market Efficiency	Return anomalies and market efficiency	BKM 11	BKM 12	
7	T 27-Mar	Equity Valuation	Dividend discount models and valuation ratios	BKM 18.1-4; H 15-16		
	W 28-Mar	Arbitrage	Arbitrage and the Law of One Price	H 17		**HW 2 Due**
8	T 3-Apr	Fixed Income Securities	Bond prices and yields	BKM 14.1-4; H 18-19	BKM 14.5	
	W 4-Apr		Bond returns, forward rates, and the yield curve	BKM 15.1-6; H 20-22	TN 4	
9	T 10-Apr	Fixed Income Securities	The yield curve; Duration	BKM 16.1-2; H 23-24		
	W 11-Apr		Duration and immunization			
10	T 17-Apr	Options	Option basics and strategies	BKM 20.1-3; H 25-26		
	W 18-Apr		Option strategies and arbitrage bounds	BKM 20.4,20.1-2; H 26-27	BKM 20.5,20.7; TN 5	
11	T 24-Apr	Options	The Black-Scholes-Merton option pricing formula	BKM 21.3-5	BKM 21.6	
	W 25-Apr	Futures	Futures	BKM 22.1, 22.3-5; H 28	BKM 22.2	**HW 3 Due**
12	T 1-May	**Final Exam**	In-class (180 min)			
	W 2-May					