Foundations of Finance

Fall 2013
FINC-UB.0002.05 and FINC-UB.0002.08

1.   Instructor

Prof. Theresa Kuchler

Office	KMC 9th floor
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Office hours	Wednesday 10-noon and by appointment

Teaching Assistants: The TA for this class is Samantha Moon (samantha.moon@stern.nyu.edu).
Her office hours will be posted on the course website and announced in class. She will teach
a review session on how to use a financial calculator after the second class (place and time
will be posted on the class website and announced in class).

2.   Class Time

The class meets twice a week on Tuesday (T) and Thursday (R), 9:30–10:45am (section
5, FINC-UB.0002.05) and 11:00–12:15am (section 8, FINC-UB.0002.08). The classroom is
Tisch-201. The first class is on Tuesday 9/3 and the last class is on Thursday 12/12. There
is no class on Tuesday 10/15 and on Thanksgiving Day. The final exam is on Tuesday
12/11, 8:00–9:50am (section 5) and 10:00–11:50am (section 8). Exams are held in the usual
classroom.

Classroom civility: Respect your classmates. Each lecture starts and ends on time. I
understand your busy schedules, but try not to arrive late. Turn off cellphones and other

audible devices before entering class. Do not engage in side conversations. Repeated class disruption will be reflected in your final grade. If you must miss a class or arrive late, please let me know by email ahead of time.

3.   Reading materials

The main class material is in the course pack that I will hand out in the first class. It contains all PowerPoint slides that I use in class, handouts with important material covered in class, problem sets, and practice exam questions. Be sure to take notes during class; space is available next to the slides and on the left page. The handouts at the end of the course pack are there to alleviate the amount of writing you need to do.

The textbooks for the course are

1 "Essentials of Investments" by Zvi Bodie, Alex Kane, Alan J. Marcus, 9th edition;

2 "Student Solutions Manual to accompany Essentials of Investments" by Zvi Bodie, Alex Kane, Alan J. Marcus, Alan Marcus, 9th edition;

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

Most of the class material is covered in [1], abbreviated BKM below. If you have an earlier, but recent edition of BKM you are fine, there are only minor changes between recent editions. However, page and chapter numbers may vary. If you use an older edition, it is your responsibility to find out the differences with the latest edition. The solution manual [2] will come in handy when doing practice problems. The material in book [3], abbreviated RWJ, is covered only in classes 3 and 4, 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 course materials through the bookstore, you can purchase [3] separately on the publisher's web site (Go to https://create.mcgraw-hill.com/shop/#/catalog/details/?isbn=9780390169501. The booklet can be found under Prof. Stijn van Nieuwerburgh's name. Item [3], ISBN: 9780390169501, price: $14.63.)

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 relying on the textbooks, I recommend purchasing them.

4. Calculator

You need a calculator for this class. 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. However, you can get help by attending the TAs' review session (after class 2) or their office hours. I have also included some slides in the course pack on how to work with the calculator.

Every student of Stern is expected to be comfortable with EXCEL tools. In particular, any Finance Area major is expected to have knowledge of these tools that extends beyond familiarity to an individual awareness of the uses and limitations of this technology.

5. Communication

The class website is on NYU Classes. 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 TAs and I will participate on a regular basis to answer your questions. You are encouraged to answer each others' questions. If you have a question, try the discussion board; chances are the question has been answered there already.

6. Exams, Assignments, and Grades

Grades will be based on the final exam (45 percent), the midterm exam (30 percent), problem sets (20 percent), and class participation (5 percent). Class participation is strongly encouraged.

At NYU Stern, we want to ensure fair and consistent grading across our core courses. As such, grades for this course will be distributed following the Stern Grading guidelines for

Core Courses at the Undergraduate College:

25–35% of students can expect to receive As for excellent work;
50–70% of students can expect to receive Bs for good or very good work;
 5–15% of students can expect to receive Cs or less for adequate or below work.

Academic Integrity: You are responsible for adhering to the NYU Stern Student Code of Conduct, which mandates zero tolerance for cheating and plagiarism. Violations of the Code of Conduct will be prosecuted with a minimum penalty of failure for the course, as required 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 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.

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 textbook readings, the problem sets, the sample exam questions, 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 inches by 11 inches. There are no restrictions on the content of the formula sheets, except that you are not allowed to reprint my PowerPoint slides verbatim. You will be asked to turn in these formula sheets after the midterm and final 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 evalutaion in class. 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. If you have to miss an exam, you will be required to make it up after the semester is over. Due to University regulations as confirmed by the Dean's office, students must take the final exam with their assigned section. Unfortunately, I have no discretion on this matter.

Concept Questions: After every class, concept questions are posted on the course website.

The concept questions test your understanding of the key ideas covered in class on that day. There are typically five multiple choice questions per test. After you have reviewed the material from class, it should take you no more than 10 minutes to complete the concept questions.

Every concept test is available for ten days, starting at the end of class. When you submit your answers, you will see a screen with your score and the correct answers. I encourage you to print or save the answers as this is the only time you will see them. I will re-post the concept questions as the midterm and final exams approach, but I will not make the answers available.

The concept questions are good preparation for the exam and a useful tool for keeping up with the material. While not formally part of your grade, I strongly encourage you to complete them.

Problem Sets: There will be 4 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.

Late problem sets are not accepted. You are encouraged to work in groups on the problems, but you must hand in your own copy and you are asked to acknowledge any help you received on the front page of your submission. The homework questions are in the spirit of the exam questions, but slightly easier. They are meant to help you begin to apply the tools developed in class.

Suggested Problems: Suggested problems are posted on the course website under "Assignments". These questions are intended to 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 are included in your course material from the bookstore. Solving lots of practice problems is key in this class.

Study Groups: I highly recommend that you form study groups and regularly review the class material in your group. Groups of about 4 students tend to work best. 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 and to note the names of other students you worked with.

7.   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 the time value of money, portfolio selection, equilibrium asset pricing (CAPM), arbitrage pricing, fixed income securities and derivatives.

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.

Prerequisites: It is necessary for this class to be comfortable with statistics, calculus, and microeconomics. You are strongly encouraged to study the review handout on statistics at the beginning of the semester (handout H0 located at the end of the course pack). Alternatively or additionally, the Quantitative Review in Appendix A of BKM will help you refresh the statistics material.

Course Outline: Below is a detailed schedule of the date and topic of each class. Main readings are marked "MR" and suggested readings are marked "SR". Handouts are marked "H" (they can be found at the end of your course pack). Note the homework due dates.

1. (T 9/3) <u>Financial Instruments</u>. Course overview; financial instruments.

    MR: Syllabus; BKM 1.1-4. SR: BKM 1.5-7,2.

2. (R 9/5) <u>Financial Markets</u>. Financial Markets.

    MR: BKM 3.1-3, 3.5, 3.7. SR: BKM 3.4, 3.6, 3.8.

3. (T 9/10) <u>Performance of Securities</u>. Present and future value, annuities, perpetuities.

    MR: RWJ 4, 5.1-2; H 1-2.

4. (R 9/12) <u>Performance of Securities</u>. Compounding and measuring returns.

    MR: RWJ 5.3-4; BKM 5.1-2, 5.4; H 3-5. SR: BKM 5.3.

5. (T 9/17) <u>Portfolio Choice</u>. Portfolio choice and portfolio returns; Efficient portfolios with two risky securities.

   MR: H 6-9; BKM 5.5, 6.1-2.

6. (R 9/19) <u>Portfolio Choice</u>. Efficient portfolios with two risky securities; Optimal portfolios and investor preferences.

   MR: BKM 5.2, 6.1-2; H 9.
   Homework 1 due in class.

7. (T 9/24) <u>Portfolio Choice</u>. Efficient and optimal portfolios with a riskless asset.

   MR: BKM 5.5-6, 6.3-4.

8. (R 9/26) <u>Portfolio Choice</u>. Efficient and optimal portfolios with multiple risky assets; Introduction to the Capital Asset Pricing Model.

   MR: BKM 6.4-5, 7.1; H 10-11. SR: BKM 6.6.

9. (T 10/1) <u>The CAPM</u>. The Capital Asset Pricing Model.

   MR: BKM 7.1-2; H 12. SR: BKM 6.6.

10. (R 10/3) <u>The CAPM</u>. Applications of the CAPM.

    MR: BKM 7.4; H 13-14. SR: BKM 7.3.

11. (T 10/8) <u>The CAPM</u>. Beyond the CAPM.

    MR: BKM 7.5; H 13-14.
    Homework 2 due in class.

12. (R 10/10) <u>Market Efficiency</u>. Return anomalies and market efficiency.

    MR: BKM 8. SR: BKM 9.

13. (R 10/17) <u>Review</u>. Midterm review.

14. (T 10/22) <u>Midterm</u>. Midterm exam.

15. (R 10/24) <u>Equity Valuation</u>. Dividend discount models and valuation ratios; Midterm evaluation.

    MR: BKM 13.1-4; H 15-16. SR: BKM 13.5-6.

16. (T 10/29) <u>Equity Valuation</u>. Dividend discount models and valuation ratios.

    MR: BKM 13.1-4; H 15-16. SR: BKM 13.5-6.

17. (R 10/31) <u>Arbitrage</u>. Arbitrage and the Law of One Price.

    MR: H 17.

18. (T 11/5) <u>Fixed Income Securities</u>. Bond prices and yields.

    MR: BKM 10.1-4, H 18-19. SR: BKM 10.5.

19. (R 11/7) <u>Fixed Income Securities</u>. Bond returns, forward rates, and the yield curve.

    MR: BKM 10.6, H 20-22.

20. (T 11/12) <u>Fixed Income Securities</u>. The yield curve; Duration.

    MR: BKM 11.1-3; H 23-24. SR: BKM 11.4.

21. (R 11/14) <u>Fixed Income Securities</u>. Duration and immunization.

    MR: BKM 11.1-3; H 23-24. SR: BKM 11.4.
    Homework 3 due in class.

22. (T 11/19) <u>Options</u>. Option basics and strategies.

    MR: BKM 15.1-2; H 25-26.

23. (R 11/21) <u>Options</u>. Option strategies and arbitrage bounds.

    MR: BKM 15.2, 16.1; H 26-27. SR: BKM 15.3-4.

24. (T 11/26) <u>Options</u>. The Black-Scholes-Merton option pricing formula.

    MR: BKM 16.2-4. SR: BKM 16.5.

25. (T 12/3) <u>Options and futures</u>. Futures.

    MR: BKM 17.1, 17.3-5; H 28. SR: BKM 17.2.

26. (R 12/5) <u>Futures</u>. Futures and swaps.

    MR: BKM 17.5-6.
    Homework 4 due in class.

27. (T 12/10) <u>Investment Management</u>. Mutual funds and hedge funds

    SR: BKM 4, 18.

28. (R 12/12) <u>Review</u>. Final review.

  * (T 12/17) <u>Final</u>. Final exam (see page 1).