

# ***DRAFT* Syllabus Foundations of Finance**

Summer Semester I, 2008

B01.2311.00 – B01.2311.60 – B01.2311.61

## **1. Instructor**

Professor Otto Van Hemert

Office: KMC 9-81

Phone: (212) 998-0353

Fax: (212) 995-4233

Email: [ovanheme@stern.nyu.edu](mailto:ovanheme@stern.nyu.edu)

Web page: <http://www.stern.nyu.edu/~ovanheme>

Office Hours: M, T, W, R 9pm–10pm, S(aturday) 4pm–5 pm, or by appointment

## **2. Teaching Assistants**

To be announced in the first class. Both the TAs and I will use [foundations.stern@gmail.com](mailto:foundations.stern@gmail.com) as corresponding email address, please indicate clearly in what section you are in every email.

## **3. Class Time**

### **Time and Venue**

Section 00      S 9am–4pm, KMC 1-70

First class S 05/17, last class (final exam) S 06/28, no class 05/24

Section 60      M/W 6pm–9pm, KMC 3-55

First class M 05/19, last class (final exam) M 06/30, no class 05/26

Section 61      T/R 6pm–9 pm, KMC 3-55

First class T 05/20, last class (final exam) R 06/26

**Classroom Civility.** Your behavior should respect your classmates desire to learn. 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.

## 4. Readings

**Textbooks.** The textbooks for this class are:

- “Investments” by Zvi Bodie, Alex Kane, Alan J. Marcus, 7th edition [**BKM**],
- “Solutions Manual to accompany Investments” by Zvi Bodie, Alex Kane, Alan J. Marcus, Alan Marcus [**S**],
- “Essentials of Corporate Finance” by Stephen A. Ross, Randolph W. Westerfield, Bradford D. Jordan, 3rd edition (November 9, 2001) [**RWJ**].

We will mainly use “Investments” by Bodie, Kane, and Markus, abbreviated BKM below. The solution manual to this book, abbreviated S, will come in handy to solve practice questions. We will only use chapters 4 and 5 from “Essentials of Corporate Finance” by Ross, Westerfield, and Jordan, abbreviated RWJ. They come as a supplement in the class material packet.

If you want to use the sixth edition of BKM it is your own responsibility to find out the corresponding chapters and sections. If you already own the “Essentials of Investment” textbook by the same authors instead, you will have difficulty finding the corresponding chapters, sections, and exercise numbers because they are all different.

The main role of the textbooks is to serve as a source where 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 topics. That being said, it is currently the best book on the market for our purposes, and you will need it to prepare before class and go over the material after class.

**Course Package.** The main class material is the course pack, which I will hand out in the first class. It contains all PowerPoint slides that I use in class, handouts with important material, problem sets, and practice exams. You will want 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.

**Staying Up-to-Date.** The class web site on Blackboard contains links to recent articles in the financial press that complement the lectures. You are encouraged to follow financial and macroeconomic news in the Financial Times, Wall Street Journal, and/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. This section of the Blackboard site is regularly updated during the semester.

## 5. Calculator

You 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 be able to 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 assistant's office hours. Also, I will post some useful slides on the class web site on how to work with the calculator.

## 6. Communication

The class web site is on Blackboard at <http://sternclasses.nyu.edu/>. This is the central location where all teaching materials are posted. TA office hours and class announcements will be posted here as well. Problem sets will be posted at least 1 week before their due date. Solutions to the problem sets will be posted no later than one week after the due date.

The class web site also contains suggested problems, and some finance links and articles. Finally, 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. You can turn to the discussion board to read your colleagues questions and provide answers to their questions.

## 7. Exams and Assignments

**Grading and Attendance.** Grades will be based on the final exam (50 percent), the midterm exam (30 percent), and problem sets (20 percent). Class participation is not compulsory, but highly recommended; it is a challenging course and the exam questions will be directly linked to the topics covered in class.

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."*

**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 required readings, the problem sets, the sample exams (located in your course pack behind the homework), 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 PowerPoint slides verbatim.

You are not allowed to take home the exam questions, and no written answers will be provided. There will be a post-midterm discussion in class 7. Once graded, you are allowed to look at your midterm in my office, during office hours or by appointment. The same rules apply to the final. If you must miss an exam, you will be required to make it up after the semester is over. Neither laptops nor palm pilots are allowed on the exam.

**Problem Sets.** There will be 4 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.** After every class, suggested problems are posted on Blackboard under *Assignments*. 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. 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.

## 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. 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 H0 located at the end of your course pack).

**Detailed Outline.** Below is a detailed schedule of the date and topic of each class. Required readings are indicated as RR, suggested readings as SR. The readings starting with “H” are handouts, situated at the end of your course packet. Homework due dates are also mentioned.

Class 1: Financial Instruments and Markets S 05/17 (morning), M 05/19, T 05/20

Overview of the Class	RR: Syllabus
Financial Instruments	RR: BKM 1.1-6, SR: BKM 2
Financial Markets	RR: BKM 1.7-8, 3.1-3, 3.5, 3.7, SR: BKM 3.4, 3.6, 3.8

Class 2: Performance of Securities S 05/17 (afternoon), W 05/21, R 05/22

PV, FV, Annuities, Perpetuities	RR: RWJ 4, 5.1-2, H1-2
Compounding, Return Measures, Distributions	RR: RWJ 5.3-4, BKM 5.1-5, H3-6, SR: BKM 5.6-8, 5.10

*Optional Financial Calculator Tutorial: S 05/17 4–5 pm, W 05/21 9–10 pm, T 05/22 9–10 pm*

Class 3: Portfolio Theory S 05/31 (morning), W 05/28, T 05/27

Portfolio Theory with Two Risky Assets	RR: BKM 7.1-2, H7-9
Investor Preferences	RR: BKM 6.1

*Homework 1 is due in class (for Saturday group per email Wednesday May 28<sup>th</sup> at the latest!)*

*Optional Statistics Tutorial: S 05/31 4–5 pm, W 05/28 9–10 pm, T 05/27 9–10 pm*

Class 4: Portfolio Theory S 05/31 (afternoon), M 06/02, R 05/29

Portfolios with a Riskless Asset	RR: BKM 6.2-4
Portfolios with Multiple Risky Securities	RR: BKM 7.3-4, H10-11, SR: BKM 7.5
Introduction to Capital Asset pricing Model	RR: BKM 9.1

Class 5: Capital Asset Pricing Model S 06/07 (morning), W 06/04, T 06/03

Index Models	RR: BKM: 8.1-3, H12, SR: BKM 8.4-5
The Capital Asset Pricing Model	RR: BKM 9.1-3, 9.5, H13, SR: BKM 9.4, 9.6

*Homework 2 is due in class (for Saturday group per email Wednesday June 4<sup>th</sup> at the latest!)*

Class 6: Arbitrage and Midterm S 06/07 (afternoon), M 06/09, R 06/05

*Midterm Exam in Class (90 mins) for Saturday group this will be swapped with morning session!*

Arbitrage and the Law of One Price (70 mins) RR: H14

Class 7: Equity Valuation and Arbitrage S 06/14 (morning), W 06/11, T 06/10

Dividend Discount Models and Valuation Ratios RR: BKM 18.1-4, H15, SR: 18.5

Midterm Evaluation

Class 8: Fixed Income Securities S 06/14 (afternoon), M 06/16, R 06/12

Bond Prices and Yields RR: BKM 14.1-4, H16-17, SR: BKM 14.5

Yield Curve and Forward Rates RR: BKM 15.1-6

Class 9: Fixed Income Securities and Options S 06/21 (morning), W 06/18, T 06/17

Duration and Immunization RR: BKM 16.1-2, H18-19, SR: BKM 16.3-5

Options Basics and Strategies RR: BKM 20.1-3, H20, SR: BKM 20.5-7

*Homework 3 is due in class (for Saturday group per email Wednesday June 18<sup>th</sup> at the latest!)*

Class 10: Options S 06/21 (afternoon), M 06/23, R 06/19

Options Strategies and Minimum Value RR: BKM 20.4, 21.1-2, H21-22

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

Class 11: Futures and Market Efficiency S 06/28 (morning), W 06/25, T 06/24

Futures and Forwards RR: BKM 22, H23

Market Efficiency RR: BKM 11, SR: BKM 12

*Homework 4 is due in class (for Saturday group per email Wednesday June 25<sup>th</sup> at the latest!)*

Class 12: Final S 06/28 (afternoon), M 06/30, R 06/26

Final exam in class (180 minutes)