Syllabus Foundations of Finance
Fall Semester 2004-2005
B01.2311.10 - B01.2311.12 - B01.2311.12

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1 Instructor

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2 Teaching Assistants

Section Tuesday: TBA: tba@stern.nyu.edu
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Section Wednesday: TBA: tba@stern.nyu.edu
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Section Thursday: TBA: tba@stern.nyu.edu
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3 Class Time

The class meets once per week, during 12 weeks. Each class time is divided into two sessions.
Session 1: 6:00-7:25 pm
Session 2: 7:40-9:00 pm.
The first class is on T 09/28, W 09/29, or R 09/30.
The last class (final exam) is on T 12/14, W 12/22, or R 12/23.
There is no class on W 11/24 and R 11/25 (Thanksgiving).
The venue is KMEC, Room TBA.

**Classroom Civility**  Your behavior should respect your classmates desire to learn. Each lecture begins exactly at 6:00 p.m. and ends exactly at 9:00 pm. Try not to come late. 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, even in a whisper. Repeated occurrence of such disruptions will be reflected in the final grade. If you must miss a class or must come late, please send me know by email beforehand.

## 4 Readings

The textbooks for this class are:


We will mainly use [1], abbreviated BKM below. Book [2] will come in helpful to solve practise questions. We will only use chapters 4 and 5 from [3], abbreviated RWJ. They come as a supplement in the class material packet.

In addition, I will hand out a course booklet in the first class that contains all powerpoint slides that I use in class, extra handouts, problem sets, and practise exams.

**Staying Up-to-Date**  The class web site 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, 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 an advantage to have a financial calculator, but not a requirement. If you are a finance major, you will be able to use a financial calculator in your other finance classes. 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 can get help on how to use the calculator by attending the teaching assistants’ review sections or office hours.
6 Communication

The class web site is on Blackboard at http://www.sternclasses.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 will be posted at least 1 week before their due date. Solutions to the problem set will be posted no later than one week after the due date.

The class web site also contains the concept questions (see below), suggested problems, and some finance links and articles. Finally, there is a discussion board in which I and the TAs will participate on a regular basis to answer your questions. You are encouraged to answer each others’ questions.

7 Exams and Assignments

Grades will be based on the final exam (40 percent), the midterm exam (40 percent), problem sets (10 percent), and classroom participation (10 percent). The participation grade consists of class participation (2/3) and participation in the concept questions on Blackboard (1/3).

The Stern finance department follows a grading curve for graduate core courses. My grades will adhere to this curve: A (10%), A- (10%), B+ (15%), B (25%), B- (20%), C+ (10%), C (5%), 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. On every assignment and exam you must include a signed statement at the top indicating that you adhered to the code of conduct. 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. To prepare for these exams, you should review your own class notes, the handouts (at the end of the booklet), the concept questions, the required readings, the problem sets, the sample exams, 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 formula sheets must be no larger than 8.5 inch by 11 inch and handwritten. No laptops nor palm pilots are allowed on the exam.

You are not allowed to take the exam questions home, and no written answers will be provided. There will be a post-midterm discussion 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 must miss an exam, you will be required to make it up after the semester is over.
Concept Questions  After every class, concept questions are posted on Blackboard under *course documents*. 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 only take you 10 minutes to complete them. Every concept test is available for ten days, starting from the time the class ends. Participation in the concept questions counts towards your participation grade (it is 1/3 of it). However, I will not keep track of whether you answered the questions correctly or not. The concept questions are good preparation for the exam and a device that gives you an extra incentive not to fall behind.

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, and must be handwritten. You are encouraged to acknowledge any help you received on the front page of your problem set solution.

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. Practise 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 with your study group. Don’t wait until exam time to set up your 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 handwritten 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, fixed income securities and option 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.
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 (T 09/28, W 09/29, R 09/30)
Overview of class RR: Syllabus
Financial Instruments RR: BKM 1.1-5, SR: BKM 2.1-5
Financial Markets RR: BKM 1.6-8, 3.1-5, 3.7 SR: BKM 3.6, 3.8

Class 2: Performance of Securities (T 10/05, W 10/06, R 10/07)
PV, FV, annuities, perpetuities RR: RWJ 4, 5.1-2, H1-2
Compounding and Return measures RR: RWJ 5.3-4, BKM 5.1, H3-5

Class 3: Portfolio Theory (T 10/12, W 10/13, R 10/14)
Positions and Portfolio Returns RR: H7,H8, BKM 5.2, SR: BKM 5.3
Efficient Portfolios with Two Risky Securities RR: BKM 6.1-2, SR: H9-10
Optimal Portfolios and Investor Preferences
Homework 1 is due in class.

Class 4: Portfolio Theory (T 10/19, W 10/20, R 10/21)
Efficient and Optimal Portfolios with Riskless Asset RR: BKM 5.5,6.3
Efficient and Optimal Portfolios with Multiple risky securities RR: BKM 6.4-5, H11
Introduction to Capital Asset pricing Model RR: BKM 7.1

Class 5: Capital Asset Pricing Model (T 10/26, W 10/27, R 10/28)
Equilibrium Asset Pricing Model RR: BKM 7.1-3, H12
Applications of the CAPM RR: H13, SR: BKM 7.4
Review before Midterm
Homework 2 is due in class.

Class 6: Midterm (T 11/02, W 11/03, R 11/04)
Two hour midterm exam in class.
Midterm evaluation in last hour (optional)
Class 7: Equity Valuation and Arbitrage (T 11/09, W 11/10, R 11/11)
Arbitrage and the Law of One Price RR: H6, BKM 21.2
Dividend Discount Models and Valuation Ratios RR: BKM 12, H14

Class 8: Fixed Income Securities (T 11/16, W 11/17, R 11/18)
Bond Prices and Yields RR: BKM 9.2 – 4, H15-17, SR: BKM 9.1, 9.5
Yield Curve and Forward Rates RR: BKM 9.6, H18

Class 9: Fixed Income Securities and Options (T 11/23, W 12/01, R 12/02)
Duration and Immunization RR: BKM 10.1-3, H19, SR: BKM 10.4-5

Homework 3 is due in class.

Class 10: Options (T 11/30, W 12/08, R 12/09)
Options Strategies and Minimum Value RR: BKM 14.2, 15.1, H21-22
Black-Scholes Option Pricing Formula RR: BKM 15.3-4, SR: BKM 15.2

Class 11: Futures and Market Efficiency (T 12/07, W 12/15, R 12/16)
Futures and Forwards RR: BKM 16.1, 16.3-4, SR: BKM 16.2,16.5
Market Efficiency RR: BKM 8

Homework 4 is due in class.

Class 12: Final (T 12/14, W 12/22, R 12/23)
Two hour final exam in class.
Final evaluation in last hour (optional)