New York University  
Leonard N. Stern School of Business  

Foundations of Finance (B01.2311.10 / B01.2311.11 / B01.2311.12)  
Fall 2003  
Professor Alex Shapiro  

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Course Content: The course introduces fundamental principles underlying the valuation of financial assets (securities), the selection of investments, and the operation of financial markets. The course focuses on markets for equities, fixed-income instruments, and derivatives. The perspective of the course is that of a user of a financial market: an individual or institutional investor, an investment advisor, or someone using the market to hedge risk. Most of what we cover is relevant to corporate finance (that is, financial decisions within the firm), but this area is not the primary focus of the course.

Required Materials:  
2. Solutions Manual to BKM.  
3. Ross, Westerfield, and Jordan (RWJ), CUSTOM VERSION of Essentials of Corporate Finance (includes chapters 4, 5, and 8).  
4. Lecture Notes (LN) (Distributed in class; Each handout may span several consecutive topics, and you should bring the appropriate handout to its associated class meetings).

Optional Materials:  

Additional Readings:  
An essential part of achieving financial literacy is an appreciation for current trends and developments. Daily reading of the online/printed Wall Street Journal (WSJ) and/or the New York Times’ (NYT) financial section is highly recommended. The Economist and Business Week are published weekly and contain insightful financial commentary. Selected articles from the aforementioned and other sources are included in the LN.

Web References:  
A small number of websites appears in the Lecture Notes to reference either real-time data or educational tools that are especially relevant for a particular topic. Although the directions to the material are currently accurate, they may change. You may need a few extra clicks to get to the right spot. Also note that the webpage of the Department of Finance (www.stern.nyu.edu/fin/) contains very useful information.

Grading:  
Your grade will be based on problem sets (10%), plus a midterm exam (45%) and a final exam (45%), or plus final exam alone (90%) -- if the final exam grade is better than the midterm’s. You must take both exams. There will be no make-up exams during the semester. If you miss any exam, you will have to wait until the next semester for a make-up. You are not graded on class attendance, but please bring your name plate to each class. If you plan to miss a class, please let me know via e-mail.

Exams and Problem Sets’ Policies:  
Exams are closed-book. You are allowed to take into the exam a calculator(s) (no laptops) and a 8.5’’×11’’ sheet of paper with handwritten or typed formulas (you can write/type on both sides; no minimized copies of BKM, RWJ, LN, or sample problems are allowed). The final exam focuses only on the material covered after the midterm (but this material builds upon the pre-midterm material). Exam format is “multiple-choice.”
**Problem Sets** are designed to complement our class discussions, and are primarily for numerical drill. The problem sets will be graded on a pass/fail basis. To receive full credit (2.5%) for each set (I-IV), you must make a good-faith effort to answer the questions (whether or not the answers are correct), to submit each set *in class* (when it is due, as indicated on the problem set’s first page), preferably *handwritten* (no faxes, or photocopies, but you should keep a copy of your answers). You may work with others on the assignments, but every student must turn in a separate answer. Late submissions will not be accepted. To help you out, you will have solutions to all problems, but you should consult the solutions *only* after you have seriously attempted to solve the problems on your own (otherwise, you cheat yourself!). Each problem set covers several topics, and submission dates are several weeks apart (to give more time to those who need it to absorb the material, or to those who had to miss a class). It is best to complete the assignment *gradually*, as the material is covered in class. Don’t wait for the submission deadline to start working on the problem set. You are encouraged to work out exercises beyond the assigned problem sets, and suggested exercises are listed in the LN. The more hands-on five-finger exercises you practice with, the better person you become.

**Calculator:**
You will need a calculator that has log functions, exponentials and computes present value and yield to maturity (suitable calculators include: HP 10B(II)/14B/12C, TI BA II Plus, the Sharp EL733A; a scientific calculator is usually inconvenient). You can get help on how to use a financial calculator by attending Teaching Assistants’ review sessions or office hours. You will need a calculator for homework and exams.

**Course Orientation:**
The field of finance is mathematical and model based. However, the models we cover have immediate practical applications and implications for real-world financial decisions. This will be emphasized in class. On the other hand, the course devotes much less time to institutional aspects. Rather than focus on the institutional details of current practice, the course provides tools for an informed usage of financial markets and instruments. Moreover, the course attempts to build a lasting conceptual framework in which to view the current financial environment, as well as to analyze future ideas and changes.

**Market Tracking Assignment:**
To help you become familiar with current trends in financial markets, I encourage you to keep a record of key financial data (best done using a spreadsheet). This is a “bonus” assignment. Every Friday (9/26-12/5) check the daily papers (WSJ or NYT) for the following information (reflecting Thursday prices, which you may record on Thursday evening if you collect data online, e.g., from [www.bloomberg.com](http://www.bloomberg.com)): *stock market data* -- Dow Jones Industrial Average (DJIA), S&P 500, NASDAQ comp., IBM; *credit markets* -- Fed funds rate, 3 month T-bill and 10 year T-note yields; *currencies* -- Euro in U.S. dollars, Japanese Yen per U.S. dollar. (Note whether you are recording an index level, a price, or a yield. On Thanksgiving week, record the Wednesday data, reported in the papers on Friday. Some rates may differ slightly depending on the time collected and the source, but such differences are negligible for our purposes.) There will be two questions on the midterm and two questions on the final based on the data you collect. However, the exams will be structured so that you may receive the maximum grade without answering the market-tracking related questions. The bonus aspect of the assignment (on top of gaining important knowledge!) is that you will have a better chance for a higher grade. You may write the data on the exam’s formula page. You should know the high, low, beginning, and ending numbers for each series, and for prices and index levels, you should also know those numbers for percentage price/level changes. [Typical exam questions based on your recorded weekly data are: Did the DJIA increase/decrease more than the NASDAQ comp. Index since the close of the first Thursday of the semester? Did the yield on the 10 year T-note stay around 2%, 5%, or 10%, and was it above/below the 3 month T-bill yield? If you were to write an at-the-money put option on IBM at the close of the first Thursday of the semester, would you have kept the put premium?]  

**Honor Code:**
You are responsible for maintaining Stern’s Honor Code, which mandates zero tolerance for cheating. Violations of the Honor Code will be prosecuted with a minimum penalty of failure for the course, as required by honor code rules. If you become aware of any violations of the honor code you must take whatever steps are necessary to stop the violators.
Classroom Civility:
You are expected to approach each class as though you were participating in an important business meeting starting at 6pm and ending at 9pm. Try not to come late. If you do come late, do not disturb your classmates (for example: remove coat and take out materials before entering, avoid walking in front of instructor, sit in nearest empty seat, don’t hand anything in until the break, don’t participate in discussion until you are sure you will not be redundant, try to time your class entrance when you hear a pause in the lecture, as opposed to entering while the instructor or your classmate are in a middle of a sentence). Do not be late to class after the designated break. Do not engage in side conversations during the lecture, even in a whisper. They are distracting. If you carry a cell phone, turn it off before entering class. You may bring a drink or snack to class, but not an entire meal. In general, your behavior should respect your classmates’ desire to learn.

Where to go for Help:
Always remember that the first and best source of help is your fellow students. You may benefit from setting up “study groups” to review the course material.

Office hours, review-session, and exam details given below are updated as of September 24.

Changes and updates, if any, are to be announced in class and via e-mail. An updated syllabus is always posted on my Homepage (under “courses”).

Teaching assistants’ (TA) office is on the 7th floor in KMC. Teaching assistants for the course are:
Jennifer Babbitt (jab422@stern.nyu.edu) Office hours: T: 5-6pm, R: 5-6pm
Gonzalo Fanjul (gcf210@stern.nyu.edu) Office hours: T: 6-7pm, F: 5-6pm (Friday in KMC 5-90)
Bradley Visokey (brv205@stern.nyu.edu) Office hours: M: 5-6pm, W: 5-6pm

TA review sessions are offered on (your attendance is optional):
M: 6:00-7:30pm (9/29-12/8), Room: KMC 3-80 (Brad)
R: 6:00-7:30pm (9/25-12/11), Room: KMC 2-90 (Jen)
F: 6:00-7:30pm (9/26-12/12), Room: KMC 3-90 (Gonzalo)

My office hours: T, W, R: 5:00-5:30pm, 9:00-10:00pm.
You are welcome to stop by my office at any other time, but you may want to set up an appointment.

When using e-mail, please start with “B01.2311.XX” in the subject heading, where XX denotes your section number (10, 11 or 12; otherwise, I may not reply in a timely manner). I will use e-mail to communicate with you on an individual basis, as well as for class announcements, so you should check your Stern e-mail regularly (you should consider to forward your Stern e-mail to whatever e-mail you check most frequently; non-Stern students have a Stern email assigned to them when registering to Stern classes). You should not view e-mail as the right medium for in-depth discussions of class or problem-set material; phone, or come by, during office hours. If these are inconvenient for you, we will set up an appointment.

Class and Exam Times (all are in Room KMC 4-90):

<table>
<thead>
<tr>
<th>Section</th>
<th>Class Time &amp; Room</th>
<th>Midterm Exam</th>
<th>Final Exam</th>
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<tbody>
<tr>
<td>B01.2311.10</td>
<td>T 6:00-7:25, 7:40-9:00pm, KMC 4-90</td>
<td>T 10/28/03   6-8pm</td>
<td>T 12/9/03  6-8pm</td>
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<tr>
<td>B01.2311.11</td>
<td>W 6:00-7:25, 7:40-9:00pm, KMC 4-90</td>
<td>W 10/29/03   6-8pm</td>
<td>W 12/17/03 6-8pm</td>
</tr>
<tr>
<td>B01.2311.12</td>
<td>R 6:00-7:25, 7:40-9:00pm, KMC 4-90</td>
<td>R 10/30/03   6-8pm</td>
<td>R 12/18/03 6-8pm</td>
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Course Outline:
The below list of topics is meant to serve as a guideline for the class sessions (departures from the list, if any, will be announced in class). LN topics do not correspond to class meetings (we may discuss more than one topic in our 3-hour meetings, or we may cover a topic that will be discussed over two consecutive meetings). I will announce in class and via e-mail the LN you should bring with you to class. The readings are from BKM, unless otherwise noted. Problem sets will be distributed in class, and due dates are stated on the first page of each problem set (Problem Set III will include a real-time exercise).
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<thead>
<tr>
<th>LN</th>
<th>Topic</th>
<th>Text-Book Readings (BKM/RWJ)</th>
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<td>1</td>
<td>Overview</td>
<td>Ch. 1, Skim Ch. 2</td>
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<td>2</td>
<td>Concepts and Tools for Portfolio, Equity Valuation, Fixed Income, and Derivative Analyses - Equilibrium, Arbitrage, Time Value of Money (Present and Future Values, Single and Multiple Cash Flows)</td>
<td>RWJ Ch. 4, 5</td>
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<td>3</td>
<td>Money Market and Debt Instruments</td>
<td>Ch. 2.1, 2.2, Skim 14.1-14.3</td>
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<td>4</td>
<td>(a) Equities: Characteristics and Markets (b) Equities: Positions and Portfolio Returns</td>
<td>Ch. 2.3, 2.4, 3.1-3.5, Ch. 3.6-3.7</td>
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<td>5</td>
<td>Uncertainly, Characterizing the Return Distribution, and Investor Preferences</td>
<td>Ch. 5.2, Ch. 6, Skim Appendix A: Quantitative Review</td>
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<td>6</td>
<td>Asset Allocation: Risky vs. Riskless</td>
<td>Ch. 7</td>
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<td>7</td>
<td>Optimal Risky Portfolios: Efficient Diversification - Asset Selection: Two Risky Assets - Asset Selection: Multiple Risky Assets</td>
<td>Ch. 8.1-8.3, Ch. 8.4-8.6</td>
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<td>8</td>
<td>Index Models</td>
<td>Ch. 10.1</td>
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<td>9</td>
<td>The Capital Asset Pricing Model (CAPM) - Applications to Corporate Finance; Introduction to Capital Budgeting</td>
<td>Ch. 9.2, 10.2, Skim RWJ Ch. 8</td>
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<td>10</td>
<td>Review for the Midterm Exam</td>
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<td></td>
<td><strong>Midterm Exam</strong></td>
<td><strong>Hand in Problem Set I</strong></td>
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<tr>
<td>11</td>
<td>Equity Valuation</td>
<td>Ch. 18.1-18.4, 18.7</td>
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<td>12</td>
<td>Bonds and The Term Structure of Interest Rates: Pricing, Yields, and (No) Arbitrage</td>
<td>Ch. 14, Ch. 15</td>
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<td>13</td>
<td>Bond Portfolio Management</td>
<td>Ch. 16.1-16.3</td>
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<td>14</td>
<td>Options: an Overview</td>
<td>Ch. 20</td>
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<td>15</td>
<td>Options: Valuation and (No) Arbitrage</td>
<td>Ch. 21.1-21.5</td>
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<td><strong>Hand in Problem Set III</strong></td>
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<td>16</td>
<td>Forwards and Futures - Swaps</td>
<td>Ch. 22.4, Ch. 23</td>
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<td>Ch. 16.5</td>
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<td>17</td>
<td>Market Efficiency</td>
<td>Ch. 12, 13.1, Skim 13.2, 13.3</td>
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<td>18</td>
<td>Summary and Review for the Final Exam</td>
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<td><strong>Final Exam</strong></td>
<td><strong>Hand in Problem Set IV</strong></td>
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