New York University
Leonard Stern School of Business

Foundations of Financial Markets
C15.0002.01,02,03

Fall 2007

Professor Information.
- Name. Riccardo Colacito.
- Email. rcolacit@stern.nyu.edu.
- Office. KMEC 9-85.
- Phone number. (212)998-0279.
- Office hours. Monday and Wednesday 6.30pm-7.30pm.

Teaching Fellow Information.
- Name. TBA
- Email. TBA
- Office. TBA
- Phone number. TBA
- Office hours. TBA


Meeting Times and Venue. Class meets twice per week on Mondays and Wednesdays for 75 minutes. Section 1 meets from 11.00am-12.15pm in room T-LC10, section 2 meets from 2.00-3.15pm in room T-UC52, and section 3 meets from 4.55-6.10pm in room T-LC10.

Overview. 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. Students are expected to understand valuation formulas and be able to apply them to new problems. Every effort will be made to relate the course material to current financial news. The appropriate statistical tools necessary for solving these problems will be developed at each stage and practiced in the homework assignments.

Prerequisites. Students must be comfortable with statistics, linear algebra, calculus, and microeconomics.

Textbooks. The textbook for this class is “Essentials of Investments” by Zvi Bodie, Alex Kane, Alan J. Marcus, 6th edition. We will abbreviate it as BKM below. I will also post the slides used in class on the course’s web-page. Occasionally, I will suggest extra readings, depending on the topics that we will cover and that the class will show particular interest in. They will also appear on the course web-page.

Calculator. You need a calculator for this class. It is an advantage to have a financial calculator, but not a requirement. You are expected to learn how to use a calculator on your own.
Exams conduct and policies. There will be one midterm and one final exams. The final exam is cumulative. All exams are closed books. No laptops nor palm pilots are allowed on the exam. Make-up quizzes will be given only for family or medical emergencies. In the interests of fairness, evidence is required. To prepare for these exams, you should review the key issues discussed in class, in the readings and in the handouts, review the problem sets you handed in, look at the suggested problem sets and suggested readings. Doing more exercises on your own is always a good idea.

Exams dates:
- first midterm: October 29th in class
- final exam: according to University schedule (class, day, and time will be posted later)

Problem Sets. There will be a problem set almost every week, starting with the second week of the class. 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. Although you are encouraged to work on the problem sets in group, answers must be handed in on your own, and must be handwritten. At the discretion of the professor, late assignments will either not be accepted or will incur a grade penalty unless due to documented serious illness or family emergency. I will make exceptions for religious observance or civic obligation only when the assignment cannot reasonably be completed prior to the due date and the student makes arrangements for late submission with the professor in advance.

Core Enhancement. All Core courses offered at Stern require students to complete a one credit Core Enhancement. In the case of this course, the Core Enhancement will take the form of an Internet based course in financial modelling using EXCEL. This Core Enhancement is administered independently from this course. Further details relating to this course will be made available within the first two weeks of class.

Grading Policy. The final counts toward 50% of your final grade. The midterm carries 30% of the final grade. The Core Enhancement will count towards 10%. Homeworks and class participation will be reflected in the remaining 10% of your grade. At Stern, we want to ensure fair and consistent grading across 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% A’s – awarded for excellent work
- 50-70% B’s – awarded for good or very good work
- 5-15% C’s (or below) – awarded for adequate or below work

Ethical Guidelines. All students are expected to follow the Stern Code of Conduct. Please make sure to read it at http://www.stern.nyu.edu/uc/codeofconduct. A student’s responsibilities include, but are not limited to, the following:
- A duty to acknowledge the work and efforts of others when submitting work as one’s own. Ideas, data, direct quotations, paraphrasing, creative expression, or any other incorporation of the work of others must be clearly referenced.
- A duty to exercise the utmost integrity when preparing for and completing examinations, including an obligation to report any observed violations.

Students with Disabilities. Students whose class performance may be affected due to a disability should notify the professor immediately so that arrangements can be made in consultation with the Henry and Lucy Moses Center for Students with Disabilities http://www.nyu.edu/csd/ to accommodate their needs.

Classroom Civility. Your behavior should respect your classmates desire to learn. Each lecture begins exactly on time. If you have problems with being on time, please visit www.time.gov. Coming late is disruptive no matter how quiet you are. Laptops, cell phones, Smartphones and other electronic devices are a disturbance to both students and professors. All electronic devices must be turned off prior to the start of each class meeting. Do not engage in side conversations during the lecture. Repeated occurrence
of such disruptions will be reflected in the final grade.

**Class Attendance.** Class attendance is mandatory and part of a student’s grade. Absences may be excused only in the case of documented serious illness, family emergency, religious observance, or civic obligation. If you will miss class for religious observance or civic obligation, you must inform your instructor no later than the first week of class. Recruiting activities are not acceptable reasons for class absence.

**Course Outline.** We will cover chapters 1 through 16 of BKM in class. Although I encourage you to read also the remainder of the book, only the knowledge of BKM 1-16 is required to pass the exam. A class by class description of topics, BKM chapters, readings and problems sets can be found at the teaching section of my homepage. Here is a sketch.

**Class 1:** Introduction
- BKM 1
- Background and issues

**Class 2-3 (9/10-9/12):** Introduction to Financial Instruments
- BKM 2
- Fixed income: money market and bond market
- Equity: stock and indexes
- Derivatives: Options and Futures

**Class 4-5 (9/17-9/19):** Financial Markets
- BKM 3
- Types of Markets and Types of orders
- Trading mechanisms
- US Security markets
- Short sales and buying on the margin

**Class 6-7 (9/24-9/26):** A primer on asset allocation
- BKM 5
- Review of statistics: mean, variances, higher order moments
- The linear regression model
- Asset allocation with a riskless and a risky asset
- Risk Aversion and choice of optimal portfolio

**Class 8-9 (10/1-10/3):** Efficient Diversification
- BKM 6
- Portfolio choice with multiple risky assets
- The benefits of portfolio diversification
- The minimum variance and the optimal risky portfolios
- Separation property

**Class 10-11 (10/8-10/10):** Factor Models and Mutual Funds
- BKM 4 and 6
- Market and firm specific risk
- The single factor model: theory and applications
- Mutual Funds: efficient diversification at work

**Class 12-13 (10/15-10/17):** CAPM and APT
- BKM 7
- The Capital Asset Pricing Model (CAPM): theory and applications
• Fama French three factor models
• Arbitrage Pricing Theory: theory and link to CAPM

**Class 14 (10/22): Efficient Markets**
- BKM 8
- Types of Efficient market hypothesis
- Empirical evidence
- The behavioral critique: should we buy it?

**Class 15-16 (10/24-10/29): Review for the midterm and midterm exam**

**Class 17-18-19 (10/31-11/5-11/7): Fixed Income**
- BKM 9-10
- Bonds and yields
- The term structure of the interest rate
- Duration and immunization

**Class 20-21-22-23 (11/12-11/21): Options markets and valuation**
- BKM 14-15
- Option markets
- Option strategies
- The binomial pricing model
- The Black and Scholes valuation formula

**Class 24-25 (11/26-11/28): Futures markets and valuation**
- BKM 16
- Motivation
- Forward and Futures
- Types of Contracts
- Trading mechanisms
- Trading strategies
- Pricing Futures contracts

**Class 26-27 (12/3-12/5): Advanced topics**
- BKM 11-13 and lecture notes
- Macroeconomics and Finance
- Equity valuation
- Forecasting volatility

**Class 28 (12/10): Revision for the final**