Tentative Schedule of Lectures for MTH210 (Fall 2009)

Chapter 1. Introduction: A Simple Market Model			
Date Ledoan	**Date Mueller**	**Section**	**Topic**
9/2	9/2–9/4	Lecture Notes	Random Walk Model
9/9	9/9	Section 1.1	Basic Notions and Assumptions
9/9	9/9	Section 1.2	No-Arbitrage Principle
9/9	9/11	Section 1.3	One-Step Binomial Model
9/9	9/11	Section 1.4	Risk and Return
9/14	9/14	Section 1.5	Forward Contracts
9/14	9/14	Section 1.6	Call and Put Options
9/14	9/14	Section 1.7	Managing Risk with Options
Chapter 2. Risk-Free Assets			
9/16	9/16	Section 2.1	Time Value Money
9/16	9/16	Subsection 2.1.1	Simple Interest
9/16	9/16	Subsection 2.1.2	Periodic Compounding
9/16	9/18	Subsection 2.1.3	Streams of Payments
9/21	9/18	Subsection 2.1.4	Continuous Compounding
9/21	9/18	Subsection 2.1.5	How to Compare Compounding Methods
9/23	9/21	Section 2.2	Money Market
9/23	9/21	Subsection 2.2.1	Zero-Coupon Bonds
9/23	9/23	Subsection 2.2.2	Coupon Bonds
9/23	9/23	Subsection 2.2.3	Money Market Account
Chapter 3. Risky Assets			
9/28	9/25	Section 3.1	Dynamics of Stock Prices
9/28	9/25	Subsection 3.1.1	Return
9/28	9/28	Subsection 3.1.2	Expected Return
9/30	9/28	Section 3.2	Binomial Tree Model
9/30	9/30	Subsection 3.2.1	Risk-Neutral Probability
9/30	9/30	Subsection 3.2.2	Martingale Property
10/7	10/2	Section 3.3	Other Models
10/7	10/2	Subsection 3.3.1	Trinomial Tree Model
10/7	10/2	Subsection 3.3.2	Continuous-Time Model
Chapter 4. Discrete Time Market Models			
10/12	10/7	Section 4.1	Stock and Money Market Models
10/12	10/7	Subsection 4.1.1	Investment Strategies
10/12	10/9	Subsection 4.1.2	The Principle of No Arbitrage
10/12	10/9	Subsection 4.1.3	Application to the Binomial Tree Model
10/14	10/12	Subsection 4.1.4	Fundamental Theorem of Asset Pricing
10/14	10/12	Subsection 4.2	Extended Models

Date Ledoan	Date Mueller	Lecture	Topic
Lecture Notes. Stochastic Calculus			
10/19	10/14	Lecture Notes	Approximation of Brownian Motion and Axioms for Brownian Motion
10/19	10/16	Lecture Notes	Continuous-Time Stock Models
10/21	10/19	Lecture Notes	Itô's Lemma
10/21	10/21	Lecture Notes	The Stochastic Differential Equation for Stock Prices and Its Solution
10/26	10/21	Lecture Notes	Pricing Formula in Terms of Brownian Motion
10/26	10/23	Lecture Notes	Itô Process and Different Forms of Itô's Lemma
10/28	10/26	Lecture Notes	The Optional Sampling Theorem and Its Implications for Market Timing
Chapter 5. Portfolio Management			
11/2	10/28	Section 5.1	Risk
11/2	10/28	Section 5.2	Two Securities
11/2	10/30	Subsection 5.2.1	Risk and Expected Return on a Portfolio
11/4	11/2	Section 5.3	Several Securities
11/4	11/2	Subsection 5.3.1	Risk and Expected Return on a Portfolio
11/4	11/4	Subsection 5.3.2	Efficient Frontier
11/9	11/4	Section 5.4	Capital Asset Pricing Mode
11/9	11/4	Subsection 5.4.1	Capital Market Line
11/9	11/6	Subsection 5.4.2	Beta Factor
11/9	11/6	Subsection 5.4.3	Security Market Line
Chapter 6. Forward and Futures Contracts			
11/12	11/9	Section 6.1	Forward Contracts
11/12	11/9	Subsection 6.1.1	Forward Price
11/12	11/11	Subsection 6.1.2	Value of a Forward Contract
11/16	11/11	Section 6.2	Futures
11/16	11/13	Subsection 6.2.1	Pricing
11/16	11/13	Subsection 6.2.2	Hedging with Futures
Chapter 7. Options: General Properties			
11/18	11/16	Section 7.1	Definitions
11/18	11/16	Section 7.2	Put-Call Parity
11/18	11/18	Section 7.3	Bounds on Option Prices
11/18	11/18	Subsection 7.3.1	European Options
11/23	11/18	Subsection 7.3.2	European and American Calls on Non-Dividend Paying Stock
11/23	11/20	Subsection 7.3.3	American Options
11/23	11/20	Section 7.4	Variables Determining Prices
11/23	11/20	Subsection 7.4.1	European Options
11/30	11/23	Subsection 7.4.2	American Options
11/30	11/30	Section 7.5	Time Value of Options

Chapter 8. Option Pricing			
Date Ledoan	**Date Mueller**	**Lecture**	**Topic**
12/2	12/2	Section 8.1	European Options in the Biomial Tree Model
12/2	12/2	Subsection 8.1.1	One Step
12/2	12/4	Subsection 8.1.2	Two Steps
12/2	12/4	Subsection 8.1.3	General N-Steps
12/7	12/7	Subsection 8.1.4	Cox-Ross-Rubinstein Formula
12/7	12/7	Section 8.2	American Options in the Binomial Tree Model
12/7–12/9	12/9–12/11	Section 8.3	Black Scholes Formula

Important Dates for Fall 2009

(1) Classes begin on Tuesday, September 1. There are no classes on Labor Day, Monday, September 7. The last day to add or drop courses is Tuesday, September 29. Fall Break is on Monday, October 5. Thanksgiving Break begins at noon on Wednesday, November 25, and runs through Sunday, November 29. The last day of classes is Friday, December 11. Final exams begin on Tuesday, December 15, and runs through Monday, December 21.

(2) The tentative date for the midterm exam is Tuesday, November 3. We will have a common exam for both sections of MTH210 outside the regular lecture times (from 0800 to 0930). The scheduled final exam date for both sections of MTH210 is Tuesday, December 15 (from 0830 to 1130). We will announce the location of the midterm and final exam rooms in class and post this information on the course web page.