Econ 477: Topics in Financial Economics: Asset Pricing (Version 1)

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Washington University in St. Louis
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1 Basic Information About The Course

Instructor: Rody Manuelli (email: manuelli@wustl.edu).
Office: 332 Seigle Hall.
Office Hours: Wednesdays 9:30-11, or by appointment.
Instructional Assistant: TBD
Office: TBD
Office Hours: TBD
Extra Session Time and Location: Fridays as needed.

About the Course The objective of the course is to develop the basic economic models that can be used to study the valuation of different financial assets and to discuss how to confront the theory with the evidence from financial markets. The course will develop the basic model of investment under uncertainty and discuss portfolio choices in static and dynamic settings as well as market equilibria and the impact of news on the forecastability of excess returns. The course will describe valuation in incomplete asset markets (e.g. arbitrage pricing theory) and the extension to the valuation of firms and real estate assets.

The emphasis is on analyzing the connection between intertemporal preferences, attitudes towards risk and macroeconomic shocks and asset prices. The course will not emphasize the discussion of institutional details about financial markets. Rather, it develops the tools that are helpful to understand why some institutions arise in equilibrium. This is not a “vocational” course that will train you how to trade in financial markets. On the contrary, we will often distinguish how a trader sees his/her activity and the approach that an economist takes. They look at the same phenomena and institutions with different questions in mind.

Prerequisites
**Economics:** In order to take advantage of the course it is necessary to have a working understanding on basic micro and macro, including the logic and the mechanics of utility maximization problems subject to constraints.

**Math:** Even though verbal and graphical analysis are very useful to build intuition, it is often necessary to go beyond the simplest setting and this requires the use of math. The required level of math is well covered by the material in Calculus I and II and in Econ 4011. We will be reviewing simple maximization problems so that we develop some common language and we use the same set of tools.

**Statistics** The course assumes that you have a basic understanding of regression analysis and properties of random variables (i.e. I assume that you know what expected value, variance and covariance means).

**Details** Given the structure of the course, it will be mostly a lecture-style affair. However, I expect you to do some reading in advance and class participation is strongly encouraged. I expect to make available copies of the lectures notes (really slides) before class. I will shoot for one week ahead but I am not sure I can deliver on that every week. I will try my best.

I will hand out several homework problems during the semester. You are encouraged to discuss the problem sets with your classmates but **you must turn in your own version.** Typed homework is a plus, but not required. Late homework will not be accepted, but one homework (the one with the lowest grade) will be dropped in calculating the grade.

**Grading** The average grade from the homework will count toward 30% of the final grade. There will be two in-class exams. The two exams combined will account for 70% of the final numerical grade. I will use —for each student— a set of variable weights. To be precise, I will assign a higher weight (40%) to the exam with the higher score while the other exam will receive a 30% weight.

*Homework:* 30%

*First Exam:* Variable 30 - 40%

*Second Exam:* Variable 30 - 40%.

**Textbook** *Recommended.* Danthine, J.P. and John B. Donaldson, Intermediate Financial Theory, Academic Press, Third Edition, 2015 (IFT). The book covers most of the material of the course at an appropriate level. I have taught this course before and many students indicated that they felt that the textbook as not really needed as the Lecture Notes (LN) were all they looked at. I am less confident than the 95% of the students (small sample) but I am not going to make the textbook required. It is (highly) recommended. The book covers most
of the material of the course at an appropriate level. I will try to be very explicit when I cover material not covered by the book and when I present material in a different way. Additional readings will be added later (in almost all cases they will be uploaded to Canvas).

**Important Notice** I will use email to make course announcements (including corrections to homework problems). Please check your email frequently.

**Important Dates** These are the tentative dates for the two exams. Since I do not want you to be under a lot of time pressure, the exams are scheduled outside of class. Please note the times as it always proves very difficult to reschedule the exams.

*First Exam:* Thursday October 10 from 1:00-4:00 PM.

*Second Exam:* Thursday December 5, from 1:00-4:00 PM.

**Rescheduled Lectures:**

Note: If we can all agree on alternative dates for the exams, I am open to changing dates and times.

### 2  Topics (in chronological order) (tentative)

1. *Introduction*
   - a Mathematical and Economic Foundations (IFT, Ch 1 and LN # 1)
   - b Pricing Fixed Income and Road Map (IFT, Ch 2 and LN # 2)

2. *Decision Making Under Uncertainty*
   - a Making Choices in Risky Situations (IFT, Ch 3 and Ch 4, and LN # 3)

3. *The Demand for Financial Assets*
   - a Risk Aversion and Investment Decisions (IFT, Ch 5 and LN # 4).
   - b Modern Portfolio Theory (IFT, Ch 6 and 7, LN # 5)

4. *Asset Pricing Models*
   - a Capital Asset Pricing Model (IFT Ch 8 and LN #6 )

5. *The Price of Contingent Contracts*
6. *Equilibrium Pricing*

   a. Arrow Debreu Pricing (IFT Ch 9 and LN # 7)

b. The Consumption Capital Asset Pricing Model (IFT Ch 10 and LN # 8)

7. *Other Topics (if time permits)*

   a. Arbitrage Pricing Theory (IFT Ch 11 and Ch 14 and LN # 9)

   a. Martingale Pricing (IFT Ch 12 and 13).

   b. Pricing Real Estate (to be determined).

   c. Asset prices and the Macroeconomy.

   e. Pricing Sovereign Debt.