Princeton University – Department of Economics  
ECO 317 – ECONOMICS OF UNCERTAINTY  
Fall Term 2009

SCHEDULE AND COURSE OUTLINE

Time and Place

Lectures: Tu-Th 3.00-4.20 in Fisher Hall B-01  
Precept: Fri 10.00-10.50 in Fisher Hall B-01

People

Professor: Avinash Dixit  
Office location: Fisher Hall 212  
Office hours: Tu We 12.30-2.00.  
Phone: 8-4013 (but please use e-mail, not phone)  
E-mail: dixitak@princeton.edu

Preceptor: Andrei Rachkov  
Office hour location: Fisher Hall B-10  
Office hours: Th 11.00-12.30  
E-mail: arachkov@princeton.edu

Course Description

This is an advanced course in microeconomic theory. Using the concepts and mathematical techniques developed in ECO 310, it studies the following topics:  
[5] Applications to the design of incentives, contracts, contests, and auctions. Concepts in game theory are developed as needed.

Textbook (required for purchase)

Cited in readings below as EGS.

Important precaution

Information about problem sets, exams, and posting of supplementary notes for lectures and precepts will be sent by e-mail, under the subject heading ECO317. You must make sure to check this frequently, and keep your e-mail account under quota.
Other books frequently cited (on reserve in Firestone library)
These books are cited in the readings by the author(s) or editors

  Firestone catalog number HB615 .A75 1976
  Firestone catalog number HB615 .U55 1989
Jack Hirshleifer and John G. Riley, *The Analytics of Uncertainty and Information*,
  Firestone catalog number HB615 .H568 1992

Prerequisites

ECO 310 is a strictly enforced prerequisite. Moreover, if you did not get a B+ or better in that course, ECO 317 is probably not for you.

Knowledge of probability theory at least at the level of ECO 202. Having done ORF 245 instead will be a slight advantage. ORF 309 will be a huge advantage.

Bottom-line issues

Problem Sets

There will be seven problem sets. Each will be posted on the course web site about a week ahead of its due date. Each will be due on a Thursday by the end of class. We will not accept late problem sets for any reason. However, only the best five will count toward the grade, so you can miss two without cost. The due dates are:
  No. 4 – Nov. 19. No. 5 – Nov. 26. No. 6 – Dec. 3. No. 7 – Dec. 10

Exams

There will be an 80-minute midterm exam in class on Thursday October 29, and a scheduled 3-hour final exam during the exam period in January. You must give higher priority to exams over other activities including travel home or to exotic locations.

Grading

The problem sets will count for 25% of the course grade.

The exam weights will be individualized: either (25% midterm, 50% final) or (20% midterm, 55% final), whichever gives you the higher score.
Course outline

The weeks given below for coverage of the individual topics are approximate and subject to revision. But the order will mostly stay as stated below, so you can use the list to plan your advance reading. The “Optional additional readings” will give you a deeper and more detailed understanding of materials covered in the “Required” readings, and thereby consolidate and extend your knowledge for uses beyond this course. Some problems etc. based on the additional material may appear, but then you will be given enough leads and hints to be able to solve them having done only the required readings.

The readings will be supplemented by notes for lectures and precepts that will be posted on the course site on Blackboard. You will be notified of these postings by e-mail. All these posted materials will become required reading.

0. Brief review of probability theory (Week 1)

Reading: Your textbook or notes from ECO 202, ORF 245, or ORF 309.

1. Expected utility theory of consumer choice under uncertainty (Weeks 1-2)

Required readings:

EGS, chapters 1, 2.
Arrow, chapters 1-2, in chapter 2 merely quickly skim pp. 55-88.

Optional additional readings:

Hirschleifer and Riley, chapter 1 pp. 7-33.


2. Applications of expected utility theory: portfolio choice, insurance, saving (Weeks 3-4)

Required readings:

EGS, chapters 3-6
Arrow, chapter 3
Optional additional readings:

Hirschleifer and Riley, chapters 2, 3

3. Critiques of expected utility theory; some alternatives (Week 5)

Required readings:

EGS, chapter 13.


Optional additional readings:

Hirshleifer and Riley, chapter 1 pp. 33-41.


4. General equilibrium under uncertainty, financial markets (Weeks 7-8)

Required readings:

EGS, chapters 10, 11.

Arrow, chapter 4.


Optional additional readings:

G. Debreu, Theory of Value, Chapter 7. Reprinted as item 11 in Diamond-Rothschild.
5. Markets with asymmetric information (Weeks 9-10)

Required readings:

EGS, chapter 12.
Arrow, chapters 8, 9. Chapter 8 is also Item 21 in Diamond-Rothschild.

Optional additional readings:


Hirshleifer and Riley, chapters 8, 11.

6. Incentives and mechanism design (Week 11)

Required readings:


Hirshleifer and Riley, chapter 4.
Optional additional readings:


7. Auctions and contests (Week 12)

Required readings:

Hirshleifer and Riley, chapter 10.

Optional additional readings:

Journal of Economic Perspectives. Symposium on auctions. 3, 1989, 3-50. Links to individual articles at http://www.jstor.org/browse/08953309/di960527?frame=noframe&userID=807028d2@princeton.edu/01cc99333e0050178cb13&dpi=3&config=jstor