Econ 510 – Spring 2013

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Office Hours:	Tue 12:30 to 1:30 pm and by appointment at 302, Gardner	T& Th 10:00 to 11:00 and by appointment, Gardner 306 A

Where: We will meet at 11:00 am, for 75 minutes, on Tuesdays and Thursdays, in Gardner 007

Why? This is a course on the theory of Uncertainty and Information. The first part of the course will define uncertainty, information, and describe how the economic agent reacts to it. In particular, we will assume information cannot be manipulated or generated, but instead, is just as is. The second part of the course will be devoted to the case where information is endogeneous, and can be generated or revealed by agents. Such ideas lie at the heart of modern microeconomics, and are central to our understanding of the modern economy.

Grading: Grades will be based on your performance in three in-class exams, and one Final exam. The Final exam will be worth 34% of your grade, while the other three exams will each count for 22% of the grade. Homeworks will be assigned, but these will not be graded. Nevertheless, to achieve mastery of the material, you will need to be diligent with these homeworks. You should also attempt the problems at the end of each chapter.

There will be in-class review sessions and (non-graded) practice homeworks. Absenteeism from exams will be unacceptable except under the most extreme circumstances and in such cases the instructor must be notified ***before*** the exam. ***We will not have makeup exams.*** If you miss an exam, we will use your scores on the other exams and the scores of the rest of the class to estimate what your score might have been. Note that if the performance of the class is exemplary, everybody could, in principle, end up with the top grade. Typically, the distribution of grades will look something like the following:

A: 12-20%, *B*: 30-35%, *C*: 30-35% and *D*, *F*: 10-15%. Note once again that there is nothing sacred about this distribution.

Exam dates: The midterms are on 31st of January, 28th of February, and 4th of April. Final Exam — Saturday May 4, at 12:00 noon.

Books

- Hirshleifer and Riley (H-R) *The Analytics of Uncertainty and Information,* Cambridge University Press,1983.
- Laffont and Matrimort (L-M), *The Theory of Incentives: The Principal-Agent Model*, Princeton University Press, 2001.
- Bolton and Dewatripont (B-D), *Contract Theory*, MIT Press, 2005.
- Klemperer (K), *Auctions: Theory and Practice*, Princeton University Press, 2004.

Outline for 1st half of 510

1. Review of Consumer Theory (handout)
2. Choice Under Uncertainty. Probabilities, utilities, risk versus uncertainty, acts, expected utility, risk aversion, paradoxes and rationality (Chapter 1 of H-R)
3. Risk Bearing for the Individual. Contingent commodities, markets, preferences over contingent commodities, prices in these markets (Chapter 2 of H-R)
4. Risk Bearing in a Market. Market equilibrium in pure exchange (with applications to share cropping), market equilibrium with production, asset markets, mean-variance models (Chapter 4 of H-R)
5. Research and Invention. What is research? How is information produced? Timing, public nature of information (Chapter 7 of H-R)

Outline for 2nd half of 510

A. Moral Hazard (Hidden Action Models)

1. Definition
2. Examples- Worker-Firm, Finance, Health Care, Car Insurance
3. Basic Two action-Two State Model (H-R 8.1, L-M , and B.-D. 4.1)

- Arrow, K., "Uncertainty and the Welfare Economics of Medical Care," *American Economic Review*, issue 5, 1963.

a. Risk neutral , Unlimited Liability Agent

b. Risk Averse, Unlimited Liability Agent

c. Risk Neutral, Limited Liability Agent

4. Product Quality Choice -

- Shapiro, C. "Premiums for High Quality Products as Returns to Reputation," *Quarterly Journal of Economics*, November 1983.

5. Multi-task Model (B-D 6.2)

B. Hidden Information Models

1. Definition and Examples – Insurance (Health, Car), Education, Finance, etc.
2. Lemons Problem -

- Akerlof, G. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics* August 1970.

3. Insurance Model – Monopoly (H-R 8.2)
4. Insurance Model – Perfect Competition (H-R 11.1)

- Rothschild, M. and J.Stiglitz, "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information," *Quarterly Journal of Economics* August l976.

5. Information Disclosure – Warranties, Intermediaries (B-D 5)
6. Signaling Models (H-R 11.3, B-D 3.2)

- Spence, M. "Job Market Signaling," *Quarterly Journal of Economics,* (3), 1973.

7. Non-linear Pricing (H-R 8.2.3 B-D 2.1,2.2)

C. Auctions (H-R 10.1, 10.2, K 1-2)

1. Complete Information - refundable bids (only winning bidder pays)
2. Complete Information - all pay auction
3. Incomplete Information - Private Values
4. Incomplete Information - Common and Correlated Values
5. Revenue Equivalence Theorem