Introduction

The purpose of this course is to introduce students to a range of economic tools used to study models explicitly involving strategic behavior, information transmission and contracting in economics and finance. These tools include agency theory, signaling, and game theory. Applications are also considered as time permits.

Course Materials

The textbook for the course is


This text is referred to below as Harris (1987). We will probably cover only Chapter 5 of this book, although, if there is sufficient interest and time, I may cover part of Chapter 2. There is also a course packet. A textbook that is especially useful both for background material not covered in class and for a treatment of much of the material we will cover is


This book is recommended but not required. It is referred to below as Kreps (1990). Also recommended is


The two books and the course packet are available from the Bookstore. All papers contained in the course packet are required reading. An approximate course schedule and a list of the contents of the course packet follows. Students are expected to read the assigned material before class. Also attached is an alphabetical reference list and the same list organized by topic. This list contains references both to readings in the packet (marked by *) and other papers that you may find useful either to fill in your

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1This paper is not included in the packet because Cambridge University Press will not give permission to reprint it. I have a copy.
background or to pursue further any of the topics covered. In the list organized by topic, some entries are marked by (S). These are suggested if you want to read one or two additional papers in an area covered in class. The list of references is not intended to be an exhaustive bibliography of papers in the areas covered in this course. It is simply a list of articles and books that I have found to be interesting or that are considered classics. Further references may be found in the reference lists of these articles.

**Grading**

*Homework:* To "practice" concepts covered in the course, homework will be required from time to time. The homeworks will not be graded, however, to make sure that you take them seriously, each assignment conscientiously done and handed in will count one point toward your final grade. Seven assignments are planned (these are in your course packet). Although I will not discuss the homeworks in class, answers will be distributed.

*Final Exam:* The remainder of your grade will depend entirely on your performance on a take-home final examination. The exam will require students to construct their own model of a given phenomenon and draw implications from it. The score on this exam will reflect the extent to which the model "captures" the given phenomenon, is tractable and the student is able to draw interesting implications from it. A copy of last year's exam and answer is in the packet.

**Office Hours**

Please call me at 312-702-2549, send me email at mlt@uchicago.edu, or see me during class to set up an appointment.

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**APPOROXIMATE CLASS SCHEDULE**

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<th>Week</th>
<th>Topic</th>
<th>Reading</th>
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<td>1-2</td>
<td>Static Agency Theory</td>
<td>Holmstrom (1979)</td>
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<td></td>
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<td>*Kreps (1990, Ch. 16)</td>
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<td>3</td>
<td>Validity of First-order Approach</td>
<td>Milgrom (1981)</td>
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<td>Rogerson (Nov. 1985)</td>
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<td>*Kreps (1990, Ch. 16)</td>
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<td>4</td>
<td>Multi-task Agency Theory</td>
<td>Holmstrom and Milgrom (1991)</td>
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<td>*Kreps (1990, Ch. 16)</td>
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<td>Dynamic Agency Theory</td>
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<td>6-7</td>
<td>Static Signaling</td>
<td>Riley (1979)</td>
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<td>*Kreps (1990, Ch. 17)</td>
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<td>7-8</td>
<td>Application of Signaling</td>
<td>Rothschild/Stiglitz (1976)</td>
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<td>8-9</td>
<td>Sequential Equilibrium and the Revolution Principle</td>
<td>Harris (1987, Ch. 5)</td>
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<td>*Kreps (1990, Chs. 11, 12, 13, 18)</td>
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<td>10</td>
<td>Refinements of Sequential Equilibrium</td>
<td>Chu/Kreps (1987)</td>
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<td>Banks/Sobel (1987)</td>
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<td></td>
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<td>*Kreps (1990, Chs. 12, 13)</td>
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*Reading is optional.
CONTENTS OF COURSE PACKET

This Syllabus
Homework Assignments
Final Exam from previous year

ARTICLES

Agency Theory


Static Signaling and Adverse Selection


Games of Incomplete Information and Sequential Equilibrium


ALPHABETICAL REFERENCE LIST

Asterisk (*) indicates inclusion in course packet.


Chen, Yuk-Shue and Hayne Leland (1982), "Prices and Qualities in Markets with Costly Information," Review of Economic Studies, October, 499-516.


Business 506 Syllabus, Spring 1995, p. 10


Pratt, J. (1964), "Risk Aversion in the Small and in the Large," *Econometrica* 32, 122-156. (D&R)


REFERENCES BY TOPIC

See alphabetical list for complete references. Asterisk (*) indicates inclusion in course packet. (S) indicates papers that are Suggested for those wishing to read one or two additional papers in an area to be discussed in class.

I. Surveys and General References

(S) Hart and Holmstrom, "The Theory of Contracts"

Intalligator, Mathematical Optimization and Economic Theory

(S) Kreps, A Course in Microeconomic Theory

Laffont, The Economics of Uncertainty and Information

Rasmusen, Games and Information

Tirole, The Theory of Industrial Organization

II. Foundations

A. Utility theory, risk aversion, and stochastic dominance

DeGroot, Optimal Statistical Decisions

Dreze, "Axiomatic Theories"

Herstein and Milnor, "An Axiomatic Approach"

Kahneman and Tversky, "Prospect Theory"

Machina, "A Stronger Characterization"

Mostin, Chapter 2 of Theory of Financial Markets

Pratt, "Risk Aversion in the Small"

Ross, "Some Stronger Measures of Risk Aversion"

Rothschild and Stiglitz, "Increasing Risk I"

Rothschild and Stiglitz, "Increasing Risk II"

B. Information theory

Auman, "Agreeing to Disagree"

(S) Geanakoplos, "Common Knowledge"

Milgrom, "An Axiomatic Characterization of Common Knowledge"

Milgrom and Roberts, "Relying on the Information of Interested Parties"

(S) Milgrom and Stokey, "Information, Trade and Common Knowledge"

Stokey, "A Simple Proof of Blackwell’s Theorem"

C. Search

Butters, "Equilibrium Distributions of Sales and"

Rothschild, "Searching for the Lowest Price"

III. Agency and Theory of Contracts

A. Static Models

I. One agent, one principal

Business 506 Syllabus, Spring 1995, p. 15

Demski and Sappington, "Delegated Expertise"

(S) Diamond, "Financial Intermediation and"

Gibbons and Murphy, "Relative Performance Evaluation"

(S) Grossman and Hart, "An Analysis of the Principal-Agent Problem"

Grossman and Hart, "Corporate Financial Structure"

(S) Harris and Raviv, "Optimal Incentive Contracts"

(R) Harris and Raviv, "Some Results on Incentive Contracts"

(*) Holmstrom, "Moral Hazard and Observability"

(*) Holmstrom and Milgrom, "Multi-Task Principal-Agent Analyses"

Holmstrom and Milgrom, "Regulating Trade Among Agents"

Jensen and Meckling, "Theory of the Firm"

Mackin and Tirole, "The Principal-Agent Relationship with an Informed Agent"

(*) Milgrom, "Good News"

Mirrlees, "The Theory of Moral Hazard"

(*) Rogerson, "The First-Order Approach"

Ross, "The Economic Theory of Agency"

Shavell, "Risk Sharing and Incentives"

2. Many agents

Aron, "Ability, Moral Hazard, and Firm Diversification"

Demski and Sappington, "Optimal Incentive Contracts"

Green and Strokey, "A Comparison of Tournaments"

(S) Holmstrom, "Moral Hazard in Teams"

(*) Holmstrom and Milgrom "Multi-Task Principal-Agent Analyses"

(S) Holmstrom and Milgrom, "Aggregation and Linearity"

(S) Lazzar and Rosen, "Rank-Order Tournaments"

Nalebuff and Stiglitz, "Prizes and Incentives"

B. Dynamic Models

(S) Bizer and DeMarzo, "Labor Contracts with Bankruptcy"

(S) Fudenberg, Holmstrom and Milgrom, "Short-Term Contracts and"

Fudenberg and Tirole, "Moral Hazard and Renegotiation"

Holmstrom, "Managerial Incentive Problems"

Lambert, "Long-Term Contracts and Moral Hazard"

Radeker, "Repeated Principal-Agent Games"

(*) Rogerson, "Repeated Moral Hazard"

IV. Games of Incomplete Information

A. General

(S) Fudenberg and Maskin, "The Folk Theorem"

Fudenberg and Tirole, "Perfect Bayesian and Sequential Equilibria"

Harris, Chapter 5 of Dynamic Economic Analysis

Harris and Townsend, "Allocation Mechanisms, Asymmetric Information"

Haraszthy, "Games with Incomplete Information"

Koberg and Mertens, "On the Stability of Equilibria"

Kreps and Wilson, "Sequential Equilibria"
Myerson, "Incentive Compatibility and ..."
Solt, "Re-examination of the Perfectness Concept ..."
Townsend, "Information Constrained Insurance ..."

B. Efficiency concepts
(S) Crawford, "Efficient and Durable Decision Rules ..."
(S) Harris and Townsend, "Resource Allocation ..."
(S) Holmstrom and Myerson, "Efficient and Durable Decision Rules ..."
Myerson, "Mechanism Design by an Informed Principal"
Myerson and Satterthwaite, "Efficient Mechanisms for ..."
Wilson, "Information, Efficiency and the Core of an Economy"

C. Auctions, Pricing Schemes, and Other Bidding Models
Fishman, "Preemptive Bidding and the Role ..."
Harris and Raviv, "Allocation Mechanisms and the Design ..."
Harris and Raviv, "A Theory of Monopoly Pricing Schemes ..."
Holt, "Competitive Bidding for Contracts ..."
Laffont and Tirole, "Repeated Auctions of Incentive Contracts, ..."
Maskin and Riley, "Optimal Auctions with Risk Averse Buyers"
(S) Milgrom, "Auction Theory"
(S) Milgrom, "A Convergence Theorem ..."
(S) Milgrom, "Rational Expectations, Information Acquisition ..."
(S) Riley and Samuelson, "Optimal Auctions"
(S) Shleifer and Vishny, "Large Shareholders and ..."
Vickrey, "Counterparts in Auctions, ..."
Wilson, "A Bidding Model of Perfect Competition"

D. Implementation
Green and Laffont, "Porter's Implementability ..."
Fafayev and Srivastava, "Implementation with Incomplete ..."

E. Bargaining
Chatterjee and Samuelson, "Bargaining Under Incomplete ..."
Cramton, "Bargaining With Incomplete Information ..."
Farrell and Gibbons, "Cheap Talk Can Matter ..."
Fudenberg, et al., "Infinite-Horizon Models of Bargaining ..."
Grossman and Perry, "Sequential Bargaining ..."
Gul, et al., "Foundations of Dynamic Monopoly ..."
Rabin, "A Bargaining Model with ..."
Samuelson, "Bargaining Under Asymmetric Information"