

Course Overview and Syllabus for Fin 395 Economics of Information

Instructor: William Fuchs

Location: UTC 1.136

Time: Tuesdays and Thursdays 2-4pm. Note, we will not meet every T&TH but only on: Aug 31st, Sept 12th 14th 19th and 21st, Oct 3rd 5th 10th 17th 31st, Nov 2nd 7th 9th 28th and 30th, Dec 5th 7th.

Office Hours: After class or by appointment William.Fuchs@mcombs.utexas.edu office CBA 6.276

Overview

The course will be divided into two large segments the first part will deal with static models (Moral Hazard, Adverse Selection, Incomplete Contracts and the Theory of the Firm, Information Design) and the second part will mainly focus on repeated games and dynamics. There will be a mix of pure theory and applications. The spirit will be to introduce a given set of tools and then show interesting use of those tools in applications. The applications will be from many fields, with Finance, Macro, Organizational Design, Auctions and Bargaining seeing more than their fair share.

The goal is not just for students to learn new theory but more importantly to see how it can be used to study interesting questions.

Grading

At this stage you should not be concerned with grades but in case you are...Your grade for this class will be given by the outcome of your take home final (70%), and your class participation and problem set performance will be taken into consideration (30%).

Take-home Final Exam: There will be a take home final the week after classes end. The exam will be open book and open note but you will be on your honor not to consult with anybody about the exam other than me and you will be on your honor not to share the contents of the exam with anyone.

Problem Sets: There will be some problem sets. These are intended for you to both solidify your understanding of the material and to explore avenues for future research. You can (and I recommend it) work on problem sets with your classmates. You should state who you have worked with. The only way to master the material in this class is to work seriously on the home-works.

Recommended Readings:

For the most part you should base your studies on the class notes. Several books that you might find useful as references are:

Part I:

Bolton P. and M. Dewatripont (2005), “Contract Theory,” MIT Press.

Hart, O. (1995) “Firms, Contracts, and Financial Structure,” Oxford University Press.

Salanie, Bernard (1997), “The Economics of Contracts: A Primer.” MIT Press.

Stole, L. (2001) “Lectures on the Theory of Contracts and Organizations,” Unpublished manuscript.

Part II:

For the most part you should base your studies on the class notes and the related papers. The related papers will be available electronically. I will point out which are the most relevant as we go along. Reading some of the applied papers we won’t have time to cover in class might also be a good idea. They will give you one more “example” of the underlying theory and might also give you new ideas for future work. Books that you might find useful as references are:

D. Fudenberg and J. Tirole, *Game Theory*, MIT, 1991 (standard textbook on game theory).

[Lars Ljungqvist](#) and [Thomas J. Sargent](#) *Recursive Macroeconomic Theory*, 2nd Edition

G. Mailath and L. Samuelson, *Repeated Games and Reputation: Long-Run Relationships*, Oxford, 2006

Topics to be covered [preliminary]:

Part I

[This is more standard material and the best references will be the class notes and you can/should use the related chapters in the books listed above as additional sources. Direct paper reading will be less important but electronic versions of related papers will be available so that you can deepen your knowledge further. I will point out if any particular paper should be studied further]

1. Hidden Type
 - 1.1. The Principle-Agent Model (Single Crossing Property, Revelation Principle, Two types, Continuum of types)
 - 1.2. Many Agents (Implementation, Auctions)
 - 1.3. Further considerations: Multidimensional types, robustness.
2. Hidden Action
 - 2.1. Two actions: Monotone Likelihood Ratio Property (MLRP), Sufficient Statistic Result.
 - 2.2. Continuum of actions: First order approach.
 - 2.3. Multidimensional effort/output: Verifiability and “you get what you pay for”
3. Incomplete Contracts and Theory of the firm.

PART II

[For this part I list more specifically the related readings. In this part the texts will be helpful but it will be important to go to the papers to get a deeper understanding. The most relevant papers for each topic are listed next to the topic. I usually recommend a quick read of the papers before class and a follow up read after class]

4. Infinitely repeated games with perfect public monitoring
 - 4.1. Theory: Class Notes
 - 4.2. Applications: Risk Sharing without Commitment
 - * J. Thomas and T. Worrall (1988), “Self-Enforcing Wage Contracts,” Review of Economic Studies 55.
 - * N. Kocherlakota (1996), “Implications of Efficient Risk Sharing without Commitment,” Review of Economic Studies 63.
 - * Dixit, G. Grossman, and F. Gul (2000) “A Theory of Political Compromise”, Journal of Political Economy, 108.
 - * Fuchs and Lippi (2006) “Monetary Union with Voluntary Participation” REStud
5. Infinitely repeated games with imperfect public monitoring:
 - 5.1. Theory: D. Abreu, D. Pearce, and E. Stacchetti (1990), “Toward a Theory of Discounted Repeated Games with Imperfect Monitoring,” Econometrica 58
 - 5.2. Applications: Collusion models

6. Length of Contract vs Relationship and Timing of Information
 - * Fudenberg Holmstrom and Milgrom (1990) "Short Term Contracts and Long Term Agency Relationships" JET
 - * D. Abreu, P. Milgrom and D. Pearce (1991), "Information and Timing in Repeated Partnerships" *Econometrica*, 59.
7. Repeated Moral Hazard (Private Action)
 - 7.1. Theory: Class Notes
 - * Rogerson W. (1985) "Repeated Moral Hazard " ECMA
 - * Spear and Srivastava (1987) "On Repeated Moral Hazard with Discounting" Restud
 - 7.2. Applications: Hopenhayn and Nicolini (1997) "Optimal Unemployment Insurance" JPE + "Employment History" Hopenhayn and Nicolini RESTUD (2009).
8. Repeated Adverse Selection (Private Type)
 - 8.1. Insurance Applications:
 - * Thomas and Worrall (1990) "Income Fluctuation and Asymmetric Information: An example of a Repeated Principal-Agent Problem". JET
 - * Atkeson and Lucas (1992) "On Efficient Distribution with Private Information" RESTUD
 - * Carrasco Fuchs and Fukuda (2017) "From Equals to Despots: The Dynamics of Repeated Group Decision Taking with Private Information" Working Paper
 - 8.2. Finance Applications:
 - Clementi and Hopenhayn (2006) "A Theory of Financing Constraints and Firm Dynamics" QJE
 - * DeMarzo-Flichman and DeMarzo-Sanikov (others to be included)
9. Relational Contracts :
 - MacLeod and Malcomson () Levin (2003) "Relational Contracts", *American Economic Review* 93.
10. Bargaining with Asymmetric Information
 - 10.1. Theory:
 - * Ausubel and Deneckere (1989) "Reputation in Bargaining and Durable Goods Monopoly." *Econometrica*, 57(3): 511-531.
 - * Lawrence M. Ausubel, Peter Cramton, and Raymond J. Deneckere (2001) "Bargaining with Incomplete Information" *Handbook of Game Theory*, Vol. 3,
 - * Deneckere, Raymond J., and Meng-Yu Liang. (2006). "Bargaining with Interdependent Values." *Econometrica*, 74(5): 1309-1364.
 - * Fuchs and Skrzypacz (2010) "Bargaining with Arrival of New Traders" / "Bargaining with Interdependent Values Experience Effects and the Coase Conjecture."
11. Dynamic Trade with Adverse Selection
12. Private Monitoring

- 12.1. Survey / Theory: M. Kandori (2002), "Introduction to Repeated Games with Private Monitoring," *Journal of Economic Theory* 102. (See whole issue for more)
 - 12.2. Applications: MacLeod (2003) Levin (2003) "Relational Contracts", *American Economic Review* 93. and Fuchs(2007) Skrzypacz and Harrington (2009)
13. Other Possible topics of interest I would like to include:
- 13.1. Dynamic Signaling Models
 - 13.2. Timing of Rewards: Debraj Ray ECMA and Opp-Zhu ECMA