MANA830075

Contract Theory

Spring 2024

Instructor: Prof. Zhuoran Lu 陆卓然

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Office Hour: Friday, from 9:30 to 11:30, or by appointment

Lecture: Friday, from 13:30 to 16:10. Classroom: Shidai Building-501

Course Prerequisite: Advanced Microeconomics, Game Theory

Course Objectives: This course studies trading relationships between small numbers of agents. It will cover many of the tools and techniques used in models of adverse selection, moral hazard and incomplete contracting. Whereas the aim is to develop a toolset, we motivate the analysis with a variety of applications drawn from Industrial Organization, Corporate Finance, Personnel Economics, and Public Economics.

Textbooks: The course is self-contained and I will publish my lecture notes on the class website. There is thus no required textbook. However, the class draws from material in the following highly recommended books.
1. Bolton and Dewatripont. 2005. *Contract Theory.* M.I.T. Press.
2. Börgers. 2015. *An Introduction to the Theory of Mechanism Design.* Oxford University Press.
3. Laffont and Martimort. 2002. *The Theory of Incentives.* Princeton University Press.
4. MacLeod, B. 2022. *Advanced Microeconomics for Contract, Institutional, and Organizational Economics*. M.I.T. Press.

Grading:

1. Participation (5%). Students will be highly encouraged to join in-class discussions.

2. Problem Sets (40%). Problem sets will be assigned on occasion. You can discuss the substance of the problems, but the final version should be your own.

3. Write your own model (10%). Find a newspaper article that discusses a contracting problem, write a model to capture the economics and discuss what theorems you would like to prove. The paper should be in English with 4-5 pages (1.5 line space), with the original article attached. The deadline is Friday, June 21st.

4. Final (45%). Friday, June 21st, from 14:00 to 17:00, closed book.

Tentative Outline

Part I Introduction
Lecture 1 Course Overview
Part II Adverse Selection Models
Lecture 2 Adverse Selection: One Agent
Lecture 3-4 Adverse Selection: Many Agents
Lecture 5-6 Adverse Selection: Dynamics
Part III Moral Hazard Models
Lecture 7 Moral Hazard: One Agent
Lecture 8 Moral Hazard: Many Agents
Lecture 9-10 Moral Hazard: Dynamics
Lecture 11 Reputation
Lecture 12 Relational Contracts
Part IV Incomplete Contracts
Lecture 13 Incomplete Contracts
Part V Information Design
Lecture 14 Bayesian Persuasion
Lecture 15 Information Design
Conclusion
Lecture 16 Summary and Discussion