BEM / Ec 146 - Organization Design

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Lecture Hours:	Tuesday and Thursday, 10:30 - 12:00 (Baxter 125)
Office Hours:	Tuesday and Wednesday, 16:00 - 17:00 (Baxter 104)
Course Website:	https://courses.caltech.edu/course/view.php?id=1559
Teaching Assistants:	Matt Kovach (mkovach@hss.caltech.edu)
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Matt's OH:	Thursday, 14:30 - 16:00 (Baxter 128)
Euncheol's OH:	Thursday, 9:00 - 10:30 (Baxter 19)
Textbook:	Bolton and Dewatripont (2005), *Contract Theory*, MIT Press ; some other readings.
Version:	March 31, 2014

Read this syllabus carefully. It is an informal contract between teacher and student, and lays out the plan for the entire term. As the quarter progresses, there may be changes. In this case, I will post revised versions on the web and let you know they are there.

Overview

This is a course about social science-based approaches to the design of organizations in developed economies (mostly business firms). We will cover many of the tools and techniques used in models of moral hazard and adverse selection. We start with static models of moral hazard and mechanism design, and develop their dynamic counterparts. While the aim is the develop a toolset, we motivate the analysis with a wide variety of applications drawn from Labor Economics, Industrial Organization, Personnel Economics, Public Economics, and Corporate Finance. The economic approach generally assumes that workers know what they want, have some foresight about their future preferences, and are patient in striving toward future goals.

Prerequisites

You are expected to have taken Introduction to Economics (Ec 11) or equivalent.

Familiarity with game theory (*e.g.*, PS / Ec 172), convex optimization (*e.g.*, Ec 181), real analysis (*e.g.*, Ma 108) and (ordinary) differential equations (*e.g.*, Ma 2 / 102) is also useful but not necessary.

Grades

Grades will be determined by three problem sets (15% each), class participation (5%), and a final exam (50%). To make your grades comparable with students at the peer schools you compete with for jobs and admission to graduate programs, I will use a fairly inflated curve with approximately 40% A's and B's, and 20% C's.

Problem Sets

There will be three problem sets. The questions will build upon the concepts and techniques taught in class, and they will be graded on a $0-100$ scale. Problem sets may be submitted in groups of up to 3 students. Each submission will be assigned a grade, and this will be your grade for that particular problem set regardless of the number of students in your group. They are due at the beginning of class on the following dates:

Problem Set #1:   Tuesday, April 22 (Week 4)
Problem Set #2:   Tuesday, May 13 (Week 7)
Problem Set #3:   Tuesday, May 27 (Week 9)

Late submissions will be reduced in grade by 50% for each day late and not accepted after two days. The only standard exception is a medical excuse approved by me at least 24 hours in advance (and certified in writing by a health care professional). You can try to email me for other extensions but I am generally very unsympathetic to granting an extension for a reason that was foreseeable in advance. (For example, if you are on a recruiting or science trip that you knew about at the beginning of the term, I won't grant an extension.)

Final Exam

The final exam will be similar to the problem sets, and it will cover everything discussed in class, in the readings and the course textbook. It will be take-home and you will have 48 hours to complete it. You may consult any notes, textbooks, etc. However, after the final exam has been posted, you may not discuss any substance of the course with your classmates.

Class Participation

Attending class is strongly recommended. I will be following the textbook loosely, so it will be helpful for you to take notes. To incentivize you to come to class and engage in the classroom discussion, (a small) part of your grade will depend on your class participation.

Readings (*subject to change*)[1]

Note: The list is long. Don't be intimidated. It is intended to be on the comprehensive side, and many of the papers below are summarized in the textbook. Reading the textbook chapters and taking notes in class should be sufficient to be successful in this course.

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[1]Thanks to Simon Board and Florian Ederer for sharing teaching material that has been very useful in designing this course.

· Bolton and Dewatripont (2005), *Contract Theory*, MIT Press (*main textbook*).

· Mas-Colell, Whinston and Green (1995), Microeconomic Theory, Oxford University Press.

· Segal and Tadelis (2002), Lectures on Contract Theory, Stanford University (online link).

· Stole (1993), Lectures on Contracts and Organizations, University of Chicago (online link).

Moral Hazard ($\sim$ 2 weeks)

· Bolton and Dewatripont, Chapters 4 and 6.2.

· Holmstrom (1979), "Moral Hazard and Observability", *Bell Journal*.

· Innes (1990), "Limited Liability and Incentive Contracting with Ex-ante Action Choices", *Journal of Economic Theory*.

· Holmstrom and Milgrom (1991), "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design", *Journal of Law, Economics, & Organization*.

· MacLeod (2003), "Optimal Contracting with Subjective Evaluation", *American Economic Review*.

Moral Hazard with Many Agents ($\sim$ 1 week)

· Bolton and Dewatripont, Chapter 8.

· Lazear and Rosen (1981), "Rank-Order Tournaments as Optimum Labor Contracts", *Journal of Political Economy*.

· Holmstrom (1982), "Moral Hazard in Teams", *Bell Journal*.

Dynamic Moral Hazard ($\sim$ 2 weeks)

· Bolton and Dewatripont, Chapter 10.

· Rogerson (1985), "Repeated Moral Hazard", *Econometrica*.

· Holmstrom and Milgrom (1987), "Aggregation and Linearity in the Provision of Intertemporal Incentives", *Econometrica*.

· Fudenburg, Holmstrom and Milgrom (1990), "Short-term Contracts and Long-term Agency Relationships", *Journal of Economic Theory*.

· Sannikov (2008), "A Continuous-Time Version of the Principal-Agent Problem", *Review of Economic Studies*.

· Georgiadis, Lippman and Tang (2014), "Project Design with Limited Commitment and Teams", *RAND Journal of Economics (forthcoming)*.

Relational Contracts ($\sim$ 1 − 2 weeks)

- Bolton and Dewatripont, Chapter 11.

- Harris and Holmstrom (1982), "A Theory of Wage Dynamics", *Review of Economic Studies.*

- Thomas and Worrall (1988), "Self-Enforcing Wage Contracts", *Review of Economic Studies.*

- Thomas and Worrall (1994), "Foreign Direct Investment and the Risk of Expropriation", *Review of Economic Studies.*

- Levin (2003), "Relational Incentive Contracts", *American Economic Review.*

- Board (2011), "Relational Contracts and the Value of Loyalty", *American Economic Review.*

Adverse Selection ($\sim 1 - 2$ weeks)

- Bolton and Dewatripont, Chapters 2 and 7.

- Baron and Myerson (1982), "Regulating a Monopolist with Unknown Costs", *Econometrica.*

- Myerson and Satterthwaite (1983), "Efficient Mechanisms for Bilateral Trading", *Journal of Economic Theory.*

- Maskin and Riley (1984), "Monopoly with Incomplete Information", *RAND Journal of Economics.*

Dynamic Adverse Selection ($\sim 1 - 2$ weeks)

- Bolton and Dewatripont, Chapter 9.

- Stokey (1979), "Intertemporal Price Discrimination", *Quarterly Journal of Economics.*

- Bulow (1982), "Durable-Goods Monopolists", *Journal of Political Economy.*

- Laffont and Tirole (1988), "The Dynamics of Incentive Contracts", *Econometrica.*

- Fuchs and Skrzypacz (2010), "Bargaining with Arrival of New Traders or New Information", *American Economic Review.*

Reputation (if time permits)

- Holmstrom (1999), "Managerial Incentive Problems: A Dynamic Perspective", *Review of Economic Studies.*

- Bar-Isaac (2003), "Reputation and Survival: Learning in a Dynamic Signalling Model", *Review of Economic Studies.*

- Board and Meyer-ter-Vehn (2013), "Reputation for Quality", *Econometrica.*