Economics 690  Contract Theory  Fall 2014

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Office Hours  Friday, 11:15 am to 12:15 pm and by appointment in 220A, Social Science Building


Where: We will meet for lectures from 8:45 am to 11:15 am on Fridays, in room 235 of the Physics Building.

Grading: Grades will be determined by one in-class exam and one Final exam, as well as an end of term group presentation. The final exam will be worth 40% of your grade, while the first exam will count for 30% of the grade, with the presentation counting for the remainder. There will also be non-graded practice homeworks. Note that if the performance of the class is exemplary, everybody could, in principle, end up with the top grade.

Students also may choose whether to write an original theory paper or to take the final exam. A decision on this choice must be reported to the faculty by the 1st of November, 2014. In order to receive capstone credit for this course you must write a theory paper.

Honour Code and Course Policies: Failure to acknowledge assistance on an assignment, or to cite a source of information used in an assignment, or to represent the work of others as your own, constitutes a violation of the University’s honor code. Any violations may result in failure of the assignment or the course, or expulsion from the University. Any exam missed for a non-legitimate reason will be accorded the grade of 0 (or equivalently, an F). Any exam missed for a legitimate reason will be made up with an oral exam as soon as it can be scheduled by EcoTeach. Presentation notes must be posted on Sakai at least 24 hours prior to the class at which the presentation will take place.
Tentative Schedule for midterm and presentations: We expect to have 8 to 10 groups of students in the class. Each group will be expected to present a paper towards the end of the term. To enhance the efficiency of class presentations, each team of presenters is expected to prepare a handout for distribution to the entire class. The handout should contain pertinent aspects of the formal presentation to avoid having to write out lots of equations in class. Even if you are not a presenter, you are expected to have read the article in detail before class. The presenters will (a) provide detailed mathematical derivations and (b) make critical analytical comments as well as simply presenting the paper; other students should be prepared to discuss the article. At times, the professors will provide brief background lectures on related literature. The intention is to provoke discussion, and for the presenter to discuss new techniques, modeling approaches, data sets, and findings, as well as to discuss shortcomings.

We will plan to have the midterm on Friday, the 10th of October. The final exam will be on Friday, December 12, from 9:00 am to noon.

Presentations. Presentations will be based on (one of) the following papers . . . .

Prerequisites: The economic prerequisites will be minimal. You should be comfortable with the notion of expected utility, lotteries, and risk aversion, and have the ability to understand and manipulate various indifference curves. The mathematical prerequisites are basic calculus (finding maxima and minima of simple constrained optimisation problems as in profit and utility maximisation) and working with small systems of inequalities (2x2 or 3x3) and the ability to move from equations to pictures and back. It would also be extremely helpful if you can integrate simple functions, and are familiar with the Fundamental Theorem of (Integral) Calculus.

Course Content

Rent-Extraction vs Efficiency. (Chapter 2 of the text.) We will look at the basic tradeoffs introduced by the presence of private information in many different settings. A useful way to think about the so-called planner’s problem, ie, the institution-free problem, in such settings is via the Revelation Principle. This idea is at the heart of all modern information economics, and we will see it repeatedly.

Adverse Selection and Screening. (Chapter 3 of the text.) How do you price different qualities of wine given that different consumers have different preferences
for quality? How do you price different packages if you own a cable company? These are the sorts of questions we will ask and analyse. All the questions have something in common. There are agents (consumers) who have private information about how much a good or product is worth to them, and there is a principal (namely the firm) who wishes to maximise profits. What pricing strategies can the firm use? We will see applications to regulation, nonlinear pricing by a monopoly, quality and price discrimination, financial contracts, and labour contracts.

**Moral Hazard or Hidden Actions.** (Chapter 4 of the text.) How and how much should you pay an employee if (i) you can’t observe his effort, and (ii) output depends both on effort and luck? This is the central question of moral hazard. Agents (say, workers) take actions that can’t be observed by the principal (say, the firm). How does a profit maximising firm design compensation? To answer this question, we will develop the theory of contracting under moral hazard. We will see applications to efficiency wages, sharecropping, wholesale contracts, financial contracts, and insurance contracts.

**Mechanism Design.** (Handouts.) We will ask the question of how to design mechanisms when there are lots of people. For instance, suppose we wish to fund the building of a public good like a bridge or a park. How much should each citizen contribute, given that each person values the good differently? On the way to answering such a question, we will see the famous VCG mechanism.

**Dynamic Contracting.** (Handouts.) Most of what we will see in this course is static, but of course, the world is not static. Dynamic contracting is contracting when there are multiple periods. We will see applications of contract theory to dynamic models of financial contracting, career concerns, insurance, and to relational contracting.