Logistical Information

Classes: Tues. and Thurs., 9:45 – 11:00 am., Spring 2009 (1st half), 415 Blegen Hall.
Instructor: David Rahman (dmr@umn.edu, econ.umn.edu/~dmr).
Office hours: Thursday, 4:00 – 5:30 or by appointment, 4-147 Hanson Hall.
Prerequisites: First-year graduate economics, basic real analysis.

Course Description

The purpose of this course is to provide students with tools and topics that will help
them find ideas for their dissertations at the frontier of research in economic theory.
As regards tools, this course will use duality as a methodological thread to connect the
material presented. As for topics, the course will begin with well-known applications
of duality in game theory, followed by increasingly recent work in contract theory and
mechanism design, to end with open questions.

Assessment

Final exam: Take-home distributed on the last day of class.
Homework: Two problem sets distributed in class on weeks 3 and 5.
Grading: A student’s overall grade will be a weighted average of homework and final.

Reading

The course will rely mainly on articles and lecture notes for its content. The following
textbooks are recommended reading.


The following textbooks are tangentially related and may be useful in the future.

Tentative Outline

Below is an outline of the course content with articles assigned for reading.

1. **Linear Programming.** The Theorem of the Alternative, weak and strong duality, the Minimax Theorem for two-person zero-sum games.
   

2. **Correlated Equilibrium.** Definition, examples, a revelation principle, proof of existence.
   
   

3. **Mechanism Design I.** Rochet’s Theorem, surplus-extracting mechanisms. Dominant-strategy versus Bayesian incentives.
   
   

4. **Contract Theory I.** Literature review, basic problems, budget balance, nearly-efficient partnerships.
   
   

5. **Contract Theory II.** Detection and enforcement, attribution, exact versus virtual enforcement.
   
   

6. **Mechanism Design II.** Standard one-dimensional problems.
   
   

   - Read: Mas-Colell et al. (1995, Chapter 23); Lavi et al. (2007); Heydenreich et al. (2009).

8. Mechanism Design IV. Robust mechanisms, monotonicity, efficiency.

   - Read: Bergemann and Morris (2005); Bikhchandani et al. (2006); Monderer (2007); Jehiel and Moldovanu (2001); Jehiel et al. (2006, 2007).

References


