

Economics 8190 Special Topics: Mechanism Design Syllabus

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General

The course meets every Monday from 5:30 p.m. to 8:00 p.m. in Tuttleman 403A. It covers the basics of, and recent developments in, mechanism design theory and emphasizes concepts and techniques likely to be useful in applied economics research.

I will hold office hours Mondays, Tuesdays, and Thursdays from 1:00 pm to 2:00 pm. Additional meeting times can be arranged for outside these hours. Please request such meetings via email at least 48 hours in advance. My office is located in Ritter Annex 813. Video-conferencing office meetings via the Web are also possible, available via prior arrangement via email. My email address is dimitrios.diamantaras@temple.edu.

To help continue our discussion of the material outside the classroom, I have set up a course page online on Piazza. Here is the description of Piazza and the link to join the class, lightly edited from the blurb Piazza provides.

This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates and myself. Rather than emailing questions to me, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

Find our class page at:

<https://piazza.com/temple/spring2015/econ8190/home>

Grading

There will be a midterm exam, a final exam, and a term paper. Each will count for one third of the final grade. The exams will be in-class, closed-book exams. The term paper will take the form of a research prospectus on a topic in mechanism design. Students will choose the topic by the end of week 8 of the semester, will submit the first draft of the paper by the end of week 11, and the final draft by the last day of classes. The midterm exam will be given on March 16, and the final on May 4.

Course Plan and Reading List

A rough plan of the course follows. In addition to the sources listed below, I will make available lecture notes. The course plan may be adjusted a little as the semester goes on.

1. **Introduction on social choice** to set up economic environments and the basic incentive problem. Discuss the Gibbard-Satterthwaite Theorem without proof. Put mechanism design in the larger context and explain what is lost and gained by not studying implementation in depth. Background reading: [Diamantaras et al. \(2009, chapter 1\)](#) and [Börgers \(2015, chapter 1\)](#). **1 week.**
2. **Classic Mechanism Design.** Follow the Börgers book. A PDF version of the book will be made available to you. [Börgers \(2015, chapters 2, 3, 4, 5, 6, 7, 8\)](#). **4 weeks.**
3. **Auctions.** [Klemperer \(2004\)](#) (but also note that Börgers covers the basics of auctions, so we will emphasize the practical considerations from Klemperer) and we will go over some of the applications and the practical concerns at the end of the Klemperer book. **2 weeks.**
4. **Matching.** Kidney exchanges and school choice, chapters 4 and 5 in [Vulkan et al. \(2013\)](#). **2 weeks.**
5. **Algorithmic Mechanism Design.** [Hartline \(2012\)](#); see also Hartline's online textbook, [Hartline \(2014\)](#), for even more detail. **3 weeks.**
6. **Evolution of Social Norms, Governing Common Property Resources.** Nobel prize document for 2009 award, [Ostrom \(2000\)](#), and [Ostrom \(1990\)](#). **1 week.**

Supplemental Readings

Here are some readings for background and also for inspiration for the term papers.

- For background, see [Myerson \(1981\)](#), [Jackson \(2003\)](#), [Jackson \(2001\)](#), and [Mas-Colell et al. \(1995, chapter 23\)](#).
- Advanced material on auction theory and practice can be found in [Milgrom \(2004\)](#), [Cramton et al. \(2006\)](#), and [Krishna \(2010\)](#). Material on auction empirics is in [Athey and Haile \(2006\)](#) and [Asker \(2013\)](#).
- Some readings on dynamic mechanism design include [Börgers \(2015, chapter 11\)](#), [Baron and Besanko \(1984\)](#), [Athey and Segal \(2013\)](#), [Pavan et al. \(2014\)](#).
- Some readings on behavioral mechanism design include [Bierbrauer and Netzer \(2014\)](#) and [Clippel \(2014\)](#). For background on the second one of these, see [Diamantaras et al. \(2009, chapter 3\)](#) and [Jackson \(2001\)](#).

- Even more material on algorithmic mechanism design is in [Roughgarden \(2013\)](#), [Chawla and Sivan \(2014\)](#), and [Nisan \(2014\)](#).
- Readings on market design are conveniently collected in [Vulkan et al. \(2013\)](#).

References

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