

Economics 510: Mechanism Design  
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Spring 2009

## Syllabus

Fisher Hall B06  
Fridays 1:30pm - 4:30pm

Maskin will teach the first six weeks (until spring break) and cover some or all of topics 1-6 (listed below); Morris will teach the second six weeks (after spring break) and cover some or all of topics 7-10 and topics 1-6 not covered in first half.

Students taking the course for credit must write a term paper. A research paper is preferred.

Class of April 3 will probably need to be re-scheduled; details later.

## SURVEY / TEXTBOOK TREATMENTS

Maskin and Sjöström. "Implementation Theory," in *Handbook of Social Choice and Welfare*, Blackboard  
Mas-Collel, Whinston and Green. *Microeconomic Theory*, chapter 23  
Borgers. "An Introduction to the Theory of Mechanism Design," Blackboard  
Osborne and Rubinstein. *A Course in Game Theory*, chapter 10

## TOPICS.

### 1. *General Environments*

Gibbard (1973). "Manipulation of Voting Schemes," *Econometrica*  
Satterthwaite (1975). "Strategy-Proofness and Arrow's Conditions," *Journal of Economic Theory*  
Maskin (1999). "Nash Equilibrium and Welfare Optimality," *Review of Economic Studies*  
Moore and Repullo (1988). "Subgame Perfect Implementation," *Econometrica*  
Jackson (1991). "Bayesian Implementation," *Econometrica*

### 2. *Quasi-linear Environments*

Vickrey (1961). "Counterspeculation and Competitive Sealed Tenders," *Journal of Finance*

- Clarke (1971). "Multipart Pricing of Public Goods," *Public Choice*
- Groves (1973). "Incentives in Teams," *Econometrica*
- d'Aspremont and Gérard-Varet (1979). "Incentives and Incomplete Information,"  
*Journal of Public Economics*
- Laffont and Maskin (1979). "A Differentiable Approach to Expected Utility Maximizing Mechanisms," in Laffont, *Aggregation and Revelation of Preferences*
- Myerson (1981). "Optimal Auction Design," *Mathematics of Operations Research*
- Riley and Samuelson (1981). "Optimal Auctions," *American Economic Review*
- Myerson and Satterthwaite (1983). "Efficient Mechanisms for Bilateral Trading,"  
*Journal of Economic Theory*
- Crémer and McLean (1985). "Optimal Selling Strategies under Uncertainty for a Discriminating Monopolist when Demands are Interdependent," *Econometrica*

### 3. Interdependent Values

- Maskin (1992). "Auctions and Privatization," in *Privatization* (ed. H. Siebert), Blackboard.
- Dasgupta and Maskin (2000). "Efficient Auctions," *Quarterly Journal of Economics*
- Perry and Reny (2002). "An Efficient Auction," *Econometrica*
- Jehiel and Moldovanu (2001). "Efficient Design with Interdependent Valuations,"  
*Econometrica*
- Jehiel, Meyer-ter-Vehn, Moldovanu and Zame (2006). "The Limits of Ex Post Implementation," *Econometrica*

### 4. Renegotiation and Contracts

- Maskin and Moore (1999). "Implementation and Renegotiation," *Review of Economic Studies*
- Segal (1999). "Complexity and Renegotiation: A Foundation for Incomplete Contracts,"  
*Review of Economic Studies*
- Maskin and Tirole (1999). "Unforeseen Contingencies and Incomplete Contracts,"  
*Review of Economic Studies*
- Segal and Whinston (2002). "The Mirrlees Approach to Mechanism Design with Renegotiation," *Econometrica*

### 5. Hard Evidence

- Bull and Watson (2007). "Hard Evidence and Mechanism Design" *Games and Economic Behavior*
- Ben-Porath and Lipman (2008). "Implementation and Partial Provability," Blackboard
- Kartik and Tercieux (2009). "Implementation with Evidence: Complete Information," Blackboard

## 6. Costly Communication

- Jordan (1982). "The Competitive Allocation Process is Informationally Efficient Uniquely," *Journal of Economic Theory*
- Nisan and Segal (2006). "The Communication Requirements of Efficient Allocations and Supporting Prices," *Journal of Economic Theory*
- Segal (2007). "The Communication Requirements of Social Choice Rules and Supporting Budget Sets," *Journal of Economic Theory*

## 7. Virtual Implementation

- Abreu and Matsushima (1992). "Virtual Implementation in Iteratively Undominated Strategies: Complete Information," *Econometrica*
- Abreu and Matsushima (1992). "Virtual Implementation in Iteratively Undominated Strategies: Incomplete Information," Blackboard

## 8. Dynamic Mechanism Design

- Battaglini (2005). "Long term Contracting with Markovian Consumers," *American Economic Review*
- Athey and Segal (2007). "An Efficient Dynamic Mechanism," Blackboard
- Bergemann and Valimaki (2008). "Efficient Dynamic Auctions," Blackboard
- Pavan, Segal and Toikka (2008). "Dynamic Mechanism Design: Revenue Equivalence, Profit Maximization and Information Disclosure," Blackboard

## 9. Robust Mechanism Design

- Eliaz (2002). "Fault Tolerant Implementation," *Review of Economic Studies*
- Neeman (2004). "The Relevance of Private Information in Mechanism Design," *Journal of Economic Theory*
- Chung and Ely (2003). "Implementation with Near-Complete Information," *Econometrica*
- Bergemann and Morris (2005). "Robust Mechanism Design," *Econometrica*
- Bergemann and Morris (2009). "Robust Implementation in Direct Mechanisms," Blackboard
- Oury and Tercieux (2008). "Continuous Implementation," to be uploaded in Blackboard
- Goldberg, Hartline, Karlin, Saks and Wright (2006). Competitive Auctions, *Games and Economic Behavior*
- Hartline and Karlin (2007). "Profit Maximization in Mechanism Design" *In Algorithmic Game Theory* (eds.: Nisan, Roughgarden, Tardo and Vazirani), Blackboard

## 10. *Multidimensional Types*

Rochet (1987). "A necessary and sufficient condition for rationalizability in a quasi-linear context," *Journal of Mathematical Economics*

Bikhchandani, Chatterji, Lavi, Mu'alem, Nisan and Sen (2006). "Weak monotonicity characterizes deterministic dominant strategy implementation," *Econometrica*

Monderer (2008). "Monotonicity and Implementability," Blackboard