

ECONOMICS 512: Advanced Microeconomic Theory II  
Princeton University  
Stephen Morris and others  
Spring 2012  
Preliminary syllabus

The course will be taught on Mondays and Wednesdays from 9am to 10:30am

Grades will be based on an exam and required class presentations.

The course will consist of my lectures on recent developments in mechanism design (approx 12 lectures), Bruno Strulovici's lectures on comparative statics (4 lectures, details to be announced, some additional guest lectures and student presentations.

### **OUTLINE OF LECTURES ON RECENT DEVELOPMENTS IN MECHANISM DESIGN**

1. Auctions
2. Mechanism Design: General Environments
3. Mechanism Design: Quasi-Linear Environments
4. Virtual Implementation
5. Interdependent Values
6. Robust Mechanism Design
7. Dynamic Mechanism Design
8. Mechanism Design and Computer Science
9. Multidimensional Mechanism Design

### **TEXTBOOKS**

Microeconomic Theory:

Mas-Collel, Whinston and Green. *Microeconomic Theory*, chapter 23

Osborne and Rubinstein. *A Course in Game Theory*, chapter 10

Mechanism Design

Borgers [B]. *An Introduction to the Theory of Mechanism Design*, book manuscript available in Blackboard.

Krishna [K]. *Auction Theory*.

## REFERENCES BY TOPIC

(some of this material is available in blackboard)

### 1. Auctions

[B] section 3.2

[K] chapters 2-4

### 2. General Environments

[B] chapter 7

Gibbard (1973). "Manipulation of Voting Schemes," *Econometrica*

Satterthwaite (1975). "Strategy-Proofness and Arrow's Conditions," *Journal of Economic Theory*

Jackson (1991). "Bayesian Implementation," *Econometrica*

Maskin (1999). "Nash Equilibrium and Welfare Optimality," *Review of Economic Studies*

Maskin and Sjöström. "Implementation Theory," in *Handbook of Social Choice and Welfare*

Moore and Repullo (1988). "Subgame Perfect Implementation," *Econometrica*

### 3. Quasi-linear Environments

[B] chapters 3-6

[K] chapter 5

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*

#### 4. *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"

#### 5. *Interdependent Values*

[B] chapter 8

[K] chapters 6, 10 and 17

Maskin (1992). "Auctions and Privatization," in *Privatization* (ed. H. Siebert).

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*

#### 6. *Robust Mechanism Design*

Eliasz (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*

----- (2007). "An Ascending Auction for Interdependent Values," *American Economic Review Papers and Proceedings*

----- (2008a). "Ex Post Implementation," *Games and Economic Behavior*.

----- (2008b). "The Role of the Common Prior Assumption in Robust Implementation," *Journal of the European Economic Association Papers and Proceedings*

----- (2009). "Robust Implementation in Direct Mechanisms," *Review of Economic Studies*

----- (2010a). "Robust Virtual Implementation," *Theoretical Economics*

----- (2010b). "Robust Implementation in General Mechanisms," *Games and Economic Behavior*.

----- (2011). "Robust Mechanism Design: An Introduction."

Oury and Tercieux (2010). "Continuous Implementation"

## 7. Mechanism Design and Computer Science

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)

Hartline and Roughgarden (2009). "Simple versus Optimal Mechanisms," *Electronic Commerce*

## 8. Dynamic Mechanism Design

Battaglini (2005). "Long term Contracting with Markovian Consumers," *American Economic Review*

Athey and Segal (2007). "An Efficient Dynamic Mechanism,"

Bergemann and Valimaki (2010). "Efficient Dynamic Auctions," *Econometrica*.

Pavan, Segal and Toikka (2011). "Dynamic Mechanism Design "

## 9. 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*

Ashlagi, Braverman, Hassidim and Monderer (2011). "Monotonicity and Implementability," *Econometrica*.