

**Market Design with Two-Sided Private Information:  
Outline for a Course in the Bavarian Graduate Program in Economics (BGPE)**

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**Course Description** This course provides an introduction to and an overview of the literature on market design when agents on both sides of the market are privately informed about their valuations and costs. It introduces basic concepts from the literature on Bayesian mechanism design and on dominant strategy mechanisms and applies these to a variety of setups, including bilateral and multi-lateral trade problems, assignments models, public goods problems, and models of partnership dissolution.

**Prerequisites** This course is aimed at somewhat advanced PhD students in economics who are familiar with basic notions of game theory such as Bayes Nash equilibrium and dominant strategies. The Bayesian mechanism design will be largely based on chapter 5 in Krishna (2002) and on Myerson (1981).

### **Tentative Course Outline**

#### **Monday 22/9/2014**

09.00 to 10.30: Lecture 1: Introduction

10.30 to 11.00: *Coffee Break*

11.00 to 12.30: Lecture 2: Dominant Strategy Mechanisms: Introduction

12.30 to 13.30: *Lunch*

13.30 to 15.00: Work on Problem Set 1

15.00 to 15.30: *Coffee Break*

15.30 to 17.30: Review of Problem Set 1 and Discussion

17.30 to 19.00: *Free time to wind down*

Starting 19.00: Dinner

#### **Tuesday 23/9/2014**

09.00 to 10.30: Lecture 3: Bayesian Mechanism Design

10.30 to 11.00: *Coffee Break*

11.00 to 12.30: Lecture 4: Bilateral Trade

12.30 to 13.30: *Lunch*

13.30 to 15.00: Work on Problem Set 2

15.00 to 15.30: *Coffee Break*

15.30 to 17.30: Review of Problem Set 2 and Discussion

17.30 to 19.00: *Free time to wind down*

Starting 19.00: Dinner

### **Wednesday 24/9/2014**

09.00 to 10.30: Lecture 5: Multilateral Trade

10.30 to 11.00: *Coffee Break*

11.00 to 12.30: Lecture 5: Assignment Problems

12.30 to 13.30: *Lunch*

13.30 to 15.00: Work on Problem Set 3

15.00 to 15.30: *Coffee Break*

15.30 to 17.30: Review of Problem Set 3 and Discussion

17.30 to 19.00: *Free time to wind down*

Starting 19.00: Dinner

### **Thursday 25/9/2014**

09.00 to 10.30: Lecture 7: Partnership Dissolution and Property Rights

10.30 to 11.00: *Coffee Break*

11.00 to 12.30: Lecture 8: Public Goods

12.30 to 13.30: *Lunch*

13.30 to 15.00: Work on Problem Set 4

15.00 to 15.30: *Coffee Break*

15.30 to 17.30: Review of Problem Set 4 and Discussion

17.30 to 19.00: *Free time to wind down*

Starting 19.00: Dinner

### **Friday 26/9/2014**

09.00 to 10.30: Lecture 9: “Almost” Efficient Dominant Strategy Mechanisms

10.30 to 11.00: *Coffee Break*

11.00 to 12.30: Lecture 10: Generalizations and Outlook

12.30 to 13.30: *Lunch*

## **References**

KRISHNA, V. (2002): *Auction Theory*. Elsevier Science, Academic Press.

MYERSON, R. B. (1981): “Optimal Auction Design,” *Mathematical Operations Research*, 6(1), 58–73.