Instructor: Dmitry Shapiro
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Office hours: 3:00 - 6:00 W, or by appointment.

Course Description and Prerequisites: BPHD 8110. This course is the second semester course in Microeconomic Theory for the Ph.D. program in Business Administration. It is a sequel to BPHD 8100 course, which is its only prerequisite. The course is devoted to game theory and economics of information. In the first part of the class I will introduce main game-theoretic concepts and in the second part I will apply these concepts to model different microeconomic interactions.

Course Objectives: The topics covered in this course represent the main theoretical tools and models used in the microeconomic theory. The objective of this course is to make students familiar with these concepts so that they can use them in their future studies and research.

Textbooks and Notes: There following materials will be used in this course:

3. Notes available at my web-site.

You should have the first book (MWG) from the fall semester of Microeconomics. The second book can be helpful for a couple of topics in the second part of the course but is not required.

Course Requirements and Grading: The grades will be determined as follows:

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Model</td>
<td>30%</td>
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<tr>
<td>Midterm</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>40%</td>
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Test dates: There will be one midterm which will cover the first part of the course. The (tentative!) date for it is February 19 during class time. If I have to change the day of the midterm I will either tell you in advance or when it is too late. The date of the final exam will be determined by the registrar.

Problem Sets: Periodically I will hand out Problem Sets. I plan to give one Problem Set every one or two weeks (not more often than once a week). Problem Sets are an essential part of the course so please make sure to put your best efforts into them. Each student must hand in an individually written answer to each assignment, but group discussion is encouraged.
Tentative Course Outline

1 Games of Complete Information. Review

2. Dynamic Games of Complete Information.
3. Finite and Infinitely Repeated Games. Folk Theorem

2 Games of Incomplete Information

2. Examples (G 3.1.B and 3.2.A)
3. Dynamic Games of Incomplete Information (G 4.1; MWG 9.C)
4. Perfect Bayesian and Sequential Equilibrium (G 4.2.A and 4.2.B; MWG 13.C)

3 Economics of Information

2. Signaling (MWG 13.C)
4. Monopolistic Screening (MWG 14.C)

4 Mechanism Design. Auctions

1. Mechanism Design Problem (MWG 23.B)
2. Dominant Strategy Implementation (MWG 23.C)
3. Bayesian Implementation (MWG 23.D)
4. Revenue Equivalence Theorem. Optimal Mechanism (MWG 23.F)