# Game Theory

Fall 2014

**Instructor:** Paulo Barelli, email: paulo.barelli@rochester.edu

**TA:** Esat Doruk Cetemen, email: esatdorukcetemen@rochester.edu

**Time and Location:** TR 9:40 - 10:55, Hutchison 473

**Office Hours:** TR 9:00 - 9:30, Harkness 214

**Recitations:** TBA.

**TA's Office Hours:** By appointment

**Textbook:** Game Theory for Applied Economists, Robert Gibbons, Princeton University Press, 1992, and Strategy: An Introduction to Game Theory, Joel Watson, W.W. Norton & Company, 2013.

Game theory is a systematic study of strategic situations. It is a theory that helps us analyze economic and political strategic issues, such as behavior of individuals in a group, competition among firms in a market, platform choices of political candidates, and so on. We will develop the basic concepts and results of game theory, including simultaneous and sequential move games, repeated games and games with incomplete information. The objective of the course is to enable you to analyze strategic situations on your own. The emphasis of the course is on theoretical aspects of strategic behavior, so familiarity with mathematical formalism is required.

**Course Organization:**

I will use Blackboard to post material and announcements. I will provide notes with a summary of the material covered in class so that students will have a concise source to follow the lectures without worrying too much about taking notes. This means that the textbooks listed above are not mandatory.

Class participation is required. By participation I mean asking and answering questions in class. I will keep track of your participation record, and assign points accordingly.

Homework assignments will be posted weekly, and due in class. Doruk's recitations are primarily aimed at providing examples and applications of the material covered in class. Solutions to the homework and exam questions will be posted.

If you are registered for the W section (ECO 288W), please come see me by the second week of classes so I can give you the guidelines for the required research paper.

There will be three midterms and a final exam. The final exam (scheduled by the registrar) will be on December 19th, at 4:00 PM, in class. The midterms will take place right after the end of each broad topic, as outlined below. I will announce the dates of the midterms as the course progresses.

**Outline:**

- Weeks 1-2: Dominance and Iterated Dominance

- Weeks 2-4: Nash Equilibrium and some extensions

- First Midterm

- Weeks 5-7: Bayesian Games

- Second Midterm

- Weeks 8-11: Extensive Form Games and Repeated Games

- Third Midterm

- Weeks 12-14: Sequential Equilibrium

**Grading:**

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| Class participation | 15% |
| Homework | 15% |
| Midterm 1 | 15% |
| Midterm 2 | 15% |
| Midterm 3 | 15% |
| Final | 25%. |