Game Theory

**Aim:** The aim of this course is to give students a solid foundation of formal research in game theory. I want to discuss some current results and their applications so that students are familiar with up-to-date research. The course aims to be formal hence students are expected to be at least not afraid of basic mathematical tools including: calculus, probability theory, fixed point theorems. Knowledge of the mathematical appendix of Mas-Colell, Whinston, and Green (1995) should suffice.

**Grade:** 40% problem sets, 60% final exam.

**Readings:** Maschler, Solan, and Zamir (2013), Fudenberg and Tirole (2002)


**Syllabus:**

   **Readings:** Maschler, Solan, and Zamir (2013): 4-5, Fudenberg and Tirole (2002): 1

T1. Applications. Cournot and Bertrand.


T2. Evolutionary stable strategies (ESS). Correlated equilibrium and other extensions.
   **Readings:** Maschler, Solan, and Zamir (2013): 5.8, 7-8, Fudenberg and Tirole (2002): 2


   **Readings:** Fudenberg and Tirole (2002): 4.4
   **Additional readings:** Osborne and Rubinstein (1990)

L5. Repeated games of complete information. Folks’ theorems.
   **Readings:** Maschler, Solan, and Zamir (2013): 13-14, Fudenberg and Tirole (2002): 4.7, 5.1-5.3, 5.5-5.6,

   **Readings:** Fudenberg and Tirole (2002): 8.1-8.3

   **Readings:** Aumann and Maschler (1995).


   **Readings:** Mas-Colell, Whinston, and Green (1995): 13-14


   **Readings:** Fudenberg and Tirole (2002): 7


   **Readings:** Serrano (2005)

We welcome questions at any time. Please don’t hesitate to ask us during class if there is something that you don’t understand or that you want to discuss. (The only exception is a question about the grading of your homework or exam paper. Please ask these questions before or after class, or in office hours.) You may also ask questions in office hours, or any other time that you catch us in our office. You may also ask questions by email.

While studying you may find useful to use various scientific paper browsers like e.g.: [econpapers.repec.org](http://econpapers.repec.org), [ideas.repec.org](http://ideas.repec.org) and [scholar.google.com](http://scholar.google.com); article databases, e.g. [www.jstor.org](http://www.jstor.org), [www.sciencedirect.com](http://www.sciencedirect.com) and [www.nber.org](http://www.nber.org).

Those interested in applications of game theory to strategic decision making are welcomed to attend my course: Industrial Organization, and those looking for applications in general equilibrium General Equilibrium Theory. Also, we invite all interested in economic theory to participate in Warsaw Economic Seminar ([sites.google.com/site/warsaweconseminars](http://sites.google.com/site/warsaweconseminars/)).
References


