Koc University
Economics 333-Game Theory and Strategy
Spring 2008

Instructor: Seda Ertac (sertac@ku.edu.tr, CAS 211, 388-1880)
Class Time and Location: Tue-Thu. 12:30-13:45, SOS B10
Office Hours: Tue-Thu. 11:00-11:30 and 14:00-15:00
Teaching Assistant: Serap Bulbul (sbulbul@ku.edu.tr)
TA office hours: To be announced.

Course description. This course aims to introduce you to the basic tools and applications of game theory. Game theory provides a way of formally modeling and analyzing situations where at least two parties (e.g. individuals, firms, countries…) interact in a strategic manner. Having started as a field of mathematics, game theory is now used extensively in economics, and has also found many applications in political science, sociology, biology and law. Topics to be covered include models of games in extensive and strategic form, equilibria with randomization, repeated games, games with imperfect and incomplete information, signaling and beliefs, and other economic applications of these models.

Prerequisites: Students should be comfortable with mathematical notation and formal reasoning, since these will be used throughout the course. Also, some background in intermediate microeconomics, calculus, and basic probability theory is required. If you don't have this background and/or are feeling uncomfortable about meeting these requirements, please contact me before deciding to enroll in the course.

Class Materials: The material that will be presented in the class is covered very well in Prof. Levent Kockesen's lecture notes on game theory. These will be posted on the course website and should be your primary reading. The book by Martin Osborne, *An Introduction to Game Theory*, Oxford U. Press (2004) is recommended as a supplementary textbook, and is available at the bookstore. For further reading, you may consider "Games of Strategy" (by Avinash K. Dixit and Susan Skeath, 2nd Ed., 2004).

Course requirements. Your course grade will be based on 4 in-class quizzes (15%), a midterm exam (35%), and a final exam (50%). The quiz dates will be announced beforehand. The midterm will be in the week of March 24th. The final will be cumulative but most of the weight will be on the latter part of the course.

Make-up exam policy: No make ups will be given for quizzes. For the midterm, no makeup will be given during the semester. If you miss the midterm for a valid reason ("valid" means that you comply with the strictest Koc University regulation related to this matter), you will need to take the midterm on the day of the final exam for Econ 333.

Academic honesty

Honesty and trust are important to all of us as individuals. Students and faculty adhere to the following principles of academic honesty at Koç University:

1.Individual accountability for all individual work, written or oral. Copying from others or providing answers or information, written or oral, to others is cheating.
2.Providing proper acknowledgment of original author. Copying from another student's paper or from another text without written acknowledgment is plagiarism.
3.Study or project group activity and authorized teamwork is effective. Unauthorized help from another person or having someone else write one's paper or assignment is collusion. Cheating, plagiarism, and collusion are serious offenses resulting in an F grade and disciplinary action.

Course outline:

1. Introduction. Games in strategic form: Dominance, Nash equilibria.
2. Mixed Strategy Nash equilibria
3. Extensive form games with perfect information: backward induction, subgame perfection.
4. More on Nash equilibria: applications.
5. Repeated games.
6. Static games with incomplete information
7. Dynamic games with incomplete information
8. Applications to problems with asymmetric information in economics