

Sabancı University
Faculty of Arts and Social Sciences
Econ 201: Games and Strategies

INSTRUCTOR:

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TEACHING ASSISTANTS:

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COURSE CONTENT

This course is an introduction to game theory. Game theory consists of a coherent set of concepts and analytical tools to examine interactive or strategic situations between people, that is, situations where the well being of one actor depends not only what s/he does but also on what others do. Hence in deciding how best to act, each person needs to consider how others are likely to act as well. Game theory has become a widely used tool of analysis in a wide range of disciplines, including economics, business, political science, law and international relations.

The **mathematical requirements** of this course are not high, and topics covered under the first year mathematics sequence (MATH 101 and 102) are more than sufficient to master the content of this course. However, the course does require students to think and reason in an analytically rigorous and systematic manner.

TEXTBOOK

The textbook for this course is

Avinash Dixit, David H. Reiley, and Susan Skeath, *Games of Strategy*, 3rd edition (DS)

In addition, the following books will be on reserve.

Avinash Dixit and Barry Nalebuff, *Thinking Strategically*, Norton, 1991 (DN).

Martin Osborne, *An Introduction to Game Theory*, Oxford University Press 2004 (Os).

HOMEWORKS AND GRADING

A set of exercises will be handed out weekly and students are expected to devote *serious* effort to homework questions in addition to textbook readings. Homeworks will be collected on Wednesdays during the lecture and a randomly selected question will be graded. The homework questions will then be solved during the following recitation. Written solutions to homework questions will *not* be supplied and thus, the students are strongly encouraged to attend the recitations. Graded homeworks will be distributed back during the recitations. There will also be unannounced quizzes during lectures and recitations.

Grading:

Homeworks and Quizzes ¹	15%	
Class participation	5%	
Midterm 1	40%	(April 7, 2014)
Midterm 2	40%	(May 21, 2014)

RULES OF CONDUCT

Students are strongly encouraged to cooperate in homeworks.

A student who (i) does not turn in a homework or (ii) is not present during the start of a quiz will be given a grade of 0. If you have a good reason for not attending a particular quiz, please produce relevant documentation for your absence.

Make-up exams are granted only in case of a valid and documented reason (in which case the instructor reserves the right to choose between a make-up exam and a transfer of the first midterm's credits to the second midterm). Absence in exams without any valid documented reason will result in a 0 from that exam. In case of an illness, the student is required to produce a formal *doctor's note from a hospital within five business days of the report's termination*. (A doctor's note taken from a doctor's private practice does not count as formal.) In case of private hospitals, the doctor's note has to be *verified by the university health service within five business days*.

The definition for scholastic dishonesty is given in the rules and regulations of the Sabanci University. In the case of scholastic dishonesty, no credits will be given for that particular work. Cheating during written work will result in an F for the course. All incidents of scholastic dishonesty will be reported to FASS for disciplinary action.

¹ The grade is determined as an average of **all** homework and quiz grades.

COURSE OUTLINE

1. Introduction *Ch 1,2*
Additional reading: DN Ch 1 and Charlie Brown in Ch 2, Os Ch1
2. Games with simultaneous moves: pure strategies *Ch 4*
Additional reading: Os Ch2 and Ch 3
3. Games with simultaneous moves: mixed strategies *Ch 5*
Additional reading: Os Ch 4
4. Collective action games *Ch 11*
Additional reading: Ch 11.3,4
5. Games with sequential moves *Ch 3*
Additional reading: Os Ch 5, Ch 6
5. Combining simultaneous and sequential moves *Ch 6*
Additional reading: Os Ch 7
6. Strategy and voting *Ch 14*
Additional reading: DN *Ch 10*
7. Bargaining *Ch 16*
Additional reading: *Ch 16. 6,7* and DN *Ch 11*
8. Evolutionary games *Ch 10*
Additional reading: *Ch 10. 7,8,9*
9. Uncertainty and Information *Ch 12*
Additional reading: Ch 12. 6,7 and DN *Ch 12*
10. Repeated games: the Prisoners' Dilemma game *Ch 8*
Additional reading: examples of other repeated games
11. Markets and competition *Ch 17*
12. Games with Strategic Moves *Ch 9*