Economics 109: Game Theory

Summer 2013, Professor Joel Watson

This course examines strategic situations, in which each agent's behavior generally affects the well-being of the other agents. Game theory is a technical framework for rigorously analyzing decision-making in such settings. Almost every type of interaction between living things is strategic. As social scientists, we focus on human interaction, and we shall assume that people behave in a rational, deliberate manner. In addition to exploring theory in the abstract, we will consider a variety of applications from economics, political science, and law.

Schedule: This course will experiment with a hybrid format, with some lectures delivered on line and flexible use of the classroom time. The meeting schedule is TTh 11:00 a.m. – 1:50 p.m. in PCYNH 122, with additional sessions on Wednesdays 12:00 – 1:50 in CSB 002. Watson will host the first part of the Wednesday sessions as office hours. Lectures will be podcast at http://podcast.ucsd.edu/. There will be no class meetings on university holidays.

Examinations: There will be occasional in-class and/or on-line quizzes and a final examination. The final exam will be on Saturday, September 7, from 11:30 a.m. to 2:30 p.m. in PCYNH 122.

Problem Sets: Problem sets will be assigned but not collected. Students will be expected to complete a variety of the textbook exercises, including all of the ones with solutions in the textbook (Exercises 1, 3, 5 and 9 from each chapter).

Grading Weights: Quizzes 40%; final 60%.

Required Textbook: Watson, J., *Strategy: An Introduction to Game Theory* (W.W. Norton), **THIRD EDITION**.

Class Website: Materials will be posted at https://ted.ucsd.edu/ on the page for Economics 109. Students should log in regularly and check for announcements. Watson's web site is: http://weber.ucsd.edu/~jwatson/wcourse.htm .

Teaching Assistant: Jong-Myun Moon, j6moon@ucsd.edu, ECON 119, office hours on Mondays 2:00 – 4:00 p.m.

Procedure for Questions: It is best to ask questions in class and in office hours. To ask questions by email, send an email to TA Jong (*not to Professor Watson*). Jong will answer your questions or forward them to Watson.

The fine print:

(1) Incidents in which students are suspected of cheating on exams will be reported to the administration.
(2) Students have one week from the day in which the midterm examinations are returned to report errors in grading and/or to request that problems be re-graded. If a student submits his/her exam for re-grading, then the student's entire exam will be re-graded by the professor (with no guarantee of a higher total score).
(3) Students should attend and participate in class; their mobile phones and other devices should not. The professor will employ the necessary means to discourage classroom distractions.

Course Outline

Topic	Chapters in the textbook
A. Representing Games	
Extensive form, strategies	1 – 3
Normal form, beliefs/mixed strategies	4 – 5
B. Analysis of Static Settings	
Best response, rationalizability, applications	6 – 8
Equilibrium, applications	9 – 10
Other equilibrium topics	11 – 12
Contract and law	13
C. Analysis of Dynamic Settings	
Extensive form, backward induction, SPE	14 – 15
Examples and applications	16 – 17
Bargaining	18 – 19
Negotiation equilibrium, examples	20 – 21
Repeated games, applications	22 – 23
E. Information	
Random events and incomplete information	24
Risk and contracting	25
Bayesian equilibrium, applications	26 – 27
PBE, applications	28 – 29

Not all topics/chapters will be covered.