Economics 109: Game Theory
Summer 2011 Session II, Professor Kristy Buzard

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 everyday life.

Schedule: TTh 8:00 – 10:50 p.m. in Center 113. There are also problem-solving/discussion sessions on Mondays (5:00 – 6:50 p.m. in Center 113). Lectures will be podcast at http://podcast.ucsd.edu/.

Examinations: There will be one midterm examination and a final examination. The midterm exam will take place on Thursday, August 18 at 8:00 a.m. in Center 113. The final exam will be on Saturday, September 3 at 8:00 a.m. in Center 113.

Problem Sets: Weekly problem sets will be assigned and points awarded for prompt completion.

Grading Weights: class participation 10%; quizzes 10%; problem sets 10%; midterm 30%; final 40%. The standard Economics Department curve will be employed to determine final grades.

Required Materials: Watson, J., *Strategy: An Introduction to Game Theory* (W.W. Norton) **2nd Edition**; iClicker Classroom Response System Transmitter (ISBN 9780716779391). You must register your iClicker on TED to receive credit for responses. You must set the sub-frequency to "**A D**" each time you turn your iClicker on (follow instructions on the back of the device) for your responses to be recorded.

Class Website: Materials will be posted on TED (https://ted.ucsd.edu). UCSD students should use their email username and password, with instructions at http://acms.ucsd.edu/units/iwdc/password.shtml. Concurrent enrollment (Extension) students are not added automatically; they should obtain a registration token from Extension's student services or the ACMS Help Desk and register for an account. More information is at: http://sdacs.ucsd.edu/~icc/ce.php.

Office Hours: Professor Buzard (kbuzard@ucsd.edu) Wednesdays 12–1 p.m.; Fridays 11 a.m. – 12 p.m. in Econ Annex (Building 103, between Geisel Library, Marshall Apartments, Eucalyptus Point and the Economics Building). TA Jake Johnson (j4johnson@ucsd.edu) Tuesdays 2-3 p.m, Thursdays 1-2 p.m. in Sequoyah 236.

The fine print:
1. If you have a documented disability, please come to talk to me as soon as possible so that I can make suitable accommodations for you. If you believe that you have a disability and desire accommodation, please register with the Office for Students with Disabilities.

2. No collaboration is allowed on exams or the *submission* of clicker answers. Incidents in which students are suspected of cheating will be reported to the administration. Students found guilty of academic dishonesty will earn a failing grade for the course. In addition, the Council of Deans of Student Affairs will impose a disciplinary penalty.

3.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. Re-grading may be requested for final exams through the first week of Fall quarter. If a student submits his/her exam for re-grading, the student's entire exam will be re-graded by the professor (with no guarantee of a higher total score).

4. If you need to miss a midterm for a verifiable medical/legal/sports reason, your midterm grade will be your grade on the final. Failure to notify me promptly that you must miss a midterm will result in a zero grade for that midterm. Unexcused absences will also result in a zero.

5. If you arrive late to an exam, I will allow you to take the exam in the time that remains *as long as no one has turned in his/her exam and left the room*. Once a classmate has turned in his/her exam, you will earn a zero on the test if you arrive late.

Course Outline

Topic   Chapters in the textbook

A. Representing Games

    Extensive form, strategies   1 – 3
    Normal form, beliefs/mixed strategies   4 – 5

II. Analysis of Static Settings

    Best response, rationalizability, applications   6 – 8
    Equilibrium, applications   9 – 10
    Mixed strategy equilibrium   11
    Contract and law   13

III. Analysis of Dynamic Settings

    Extensive form, backward induction, SPE   14 – 15
    Examples and applications   16
    Bargaining   18 – 19
    Repeated games, applications   22 – 23

IV. Information

    Random events and incomplete information   24
    Bayesian equilibrium, applications   26 – 27
    PBE, applications   28 – 29