

**ECO 354K**  
**Introductory Game Theory**

Course identifier: 33650  
Meets MW 930am-1100am BRB 2.136  
Spring 2016

Instructor: Prof. V Bhaskar  
Office: BRB 3.162  
Phone: 5-8535  
Email: v.bhaskar@austin.utexas.edu  
Office Hours: Fridays 2-3pm

Teaching Assistant: Xuanye Wang  
Office: BRB 4.132  
Phone: 5-8535  
Email: xuanye.wang@utexas.edu  
Office Hours: TBA

NOTE: If you are admitted or waitlisted for this course, *you need to attend the first lecture on Wednesday 20 January*. There will be a short test which will be informative about how compatible you are with the course.

This course is an introduction to game theory, i.e. decision making in a strategic context. The course builds on what you have learnt regarding decisions under uncertainty and game theory in ECO 420K (Microeconomic Theory). You need to be comfortable with mathematical/logical reasoning, and will also need elementary probability theory, as covered in ECO 329 (Economic Statistics).

This course is also open to math students, for whom the above courses are not a pre-requisite (it is assumed you would have done enough math to compensate).

The textbook for the course is:  
Martin J. Osborne, *An Introduction to Game Theory*, Oxford University Press. All chapter references below are to this book.

Assessment: Most of the assessment will require solving problems.  
Homework (10%). Two mid-term exams (30% each). Final exam 30%.

**Homework:** You are expected to hand in an assignment every week. The TA will conduct a weekly problem session where solutions will be discussed. The time for the problem session is to be arranged. The overall homework grade will be based on the average over the semester, excluding your two worst homework grades

**Exams:** dates of mid-terms to be announced.

**No make-up exams will be given.**

**If you cannot take an exam and have a valid reason – you need to clear this with me before the exam – the following compensation is applicable:**

If you miss the first mid-term, the second mid-term and final will each carry 45% marks. If you miss the second mid-term, the final exam will carry 60% marks. If you miss both mid-terms, the final exam will carry 60% marks, and you will lose 30% marks.

**Special needs:** The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. To determine if you qualify, please contact the Division of Diversity and Community Engagement, Services for Students with Disabilities at 471-6259. If they certify your needs, I will work with you to make appropriate arrangements.

**Policy on scholastic dishonesty:** Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. For further information, please visit the Student Judicial Services web site at [deanofstudents.utexas.edu/sjs/](http://deanofstudents.utexas.edu/sjs/).

### **Course outline**

We will certainly cover topics 1-5, and some selection from topics 6-8.

1. Games in Strategic Form. Nash Equilibrium. (ch. 2,3). Mixed strategy Nash equilibrium (ch 4). Also, Walker and Wooders, Minmax play at Wimbledon, *American Econ. Review*, 2001, pp 1521-1538.
2. Extensive games with perfect information. Subgame perfect equilibrium (ch 5,6). Games with simultaneous moves (ch 7).
3. Applications: Repeated games ch 14,15.
4. Bayesian games (ch 9).
5. Extensive games with imperfect information (ch 10).
6. Evolutionary games (ch 13).
7. Bargaining (ch 16).
8. Coalitional games, matching (ch 8).

