Syllabus: Game Theory

Master in Social Sciences

IC3JM

Spring 2018

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Meeting times: Fridays, 9:30-12:30

Meeting Room: Aula 18.0.A01

Office Hours: By appointment

Course Description:

This course is designed to provide a thorough understanding of the basic concepts of game theory at the graduate level. Game theory deals with the study of strategic interaction among individuals. We will structure the material in terms of when and how individuals make their decisions (simultaneously or sequentially) and in terms of how much information is available to players each time they make a decision (games of complete information vs games of incomplete information). We will discuss theory and provide applications in different fields of the social sciences. The goal of the course is for the students to develop the analytical skills needed to understand research that uses basic game theoretic models and to be able to use some game theoretic tools in their own work.

Textbooks

The following textbooks are excellent references for this course:

Gibbons, R. Game Theory for Applied Economists, Princeton University Press

McCarty, N.; Meirowitz, Political Game Theory, Cambridge University Press

Morrow, J. D. Game Theory for Political Scientists, Princeton University Press

The basic reference for the class is Gibbons, which covers the material thoroughly but also gives plenty of intuition. McCarty's book is also a great combination of rigor and applications to political sciences. Morrow's book is better suited for an undergraduate class, but is also an excellent book to look at if you are looking for intuition and applications to political science.

Grading Policy

Grading will be based on problem sets which will account for 30% of the grade, a midterm (30%) and a cumulative final exam (40%).

Problem sets will be handed out approximately every other week. Students are encouraged to work in groups to prepare the problem sets but each student must turn in its own write-up of the assignment.

Problem solving is essential for understanding and mastering the material. The weight put on problem sets, is aimed at highlighting the importance of applications for success in this class.

Course Outline

1. Static Games of Complete Information
2. Dynamic Games of Complete Information
3. Static Games of Incomplete Information
4. Dynamic Games of Incomplete Information