GV4C8: Game Theory For Political Science 2006-07

Lecturers: Dr Torun Dewan (L310) and Dr Valentino Larcinese (L300)
Meeting Time: Wednesday 3-5, Z032

1. Course Description

Game theory provides a scientific approach to the study of social interactions which focusses on the strategic aspects of decision-making between two or more individuals or groups. This course will cover the basic elements of game theory and how they have been applied in the area of political science. The aim of the course is to provide a deeper understanding of game-theoretic tools and to prepare you for research in the area of formal theory.

The first part of the course will look at games in normal and in extensive form. The second part of the course course will focus on games which take place over time and games where informational uncertainty play a role.

The lectures will focus on the key technical issues and will also show how the key ideas from game-theoretic literature have been applied in political science, economics and sociology. Amongst other topics we will look at issues of bargaining and redistribution in legislative settings and the role of institutions. Assessment is on a two-hour exam in the summer term.

1.1. **Readings.** There are many text-books which you may find useful. The level of the course is at Gibbons (1992) which, however, focuses mainly on economic applications. Another useful text is Osborne (2004) which includes many political science applications. You may find Fudenberg and Tirole (1991) useful for some of the later topics, especially repeated games. Morrow (1994) is aimed at political scientists and covers most of the topics.

References

Fudenberg, D., and J. Tirole (1991): *Game Theory*. Cambridge,Mass,MIT Press.

Gibbons, R. (1992): *A Primer in Game Theory*. Prentice Hall.

Morrow, J. (1994): *Game Theory for Political Scientists*. Princeton University Press.

Osborne, M. (2004): *An Introduction to Game Theory*. Oxford University Press.

2. topics

Week 1	Lecture 1	Introduction
Week 2	Lecture 2	Static Games
Week 3	Lecture 3	Extensive-Form Games
Week 4	Seminar	Problem set
Week 5	Lecture 4	Repeated Games I
Week 6	Lecture 5	Repeated Games II
Week 7	Lecture 6	Problem set
Week 8	Lecture 7	Games with Imperfect Information I
Week 9	Lecture 8	Games with Imperfect Information II
Week 10	Seminar	Problem-set

3. Weekly topics

Week 2: *Nash equilibrium, dominated strategies and best response profiles, collective action problems, coordination problems, mixed strategies, reaction functions.*

Gibbons chapter 1

Osborne chapters 2-4

Palacios-Huerta, Ignacio.(2003) "Profesionals play mini-max", *Review of Economic Studies*, vol 2, 395-415

Mackie, G .(1996) "Ending Footbinding and Infibulation: A Convention Account", *American-Sociological-Review*, 61, 6, 999-1017

Week 3: *Sub-game perfection, backward induction, the commitment problem, credibility.*

Gibbons chapter 2

Osborne chapters 5-6

Barro, R. and Gordon, D.B. (1983) "Rules, Discretion and Reputation in a Model of Monetary Policy", *Journal of Monetary Economics.*

Greif. A , Milgrom. P and Weingast, B. (1994) "Coordination, commitment, and enforcement: The case of the merchant guild", *Journal of Political Economy*, 102, 745-776.

Week 5: *Multi-stage games, stationarity, bargaining, first and last move advantage.*

Osborne chapter 16

Baron, D., and Ferejohn, J. (1987) "Bargaining in Legislatures", *American Political Science Review*, vol 83

Henrich, J et al. (2001)"In Search of Homo-Economicus: Behavioural experiments in 15 small scale societies", *American Economic Review* (91), 73-78.

Week 6: *Finitely repeated games, Trigger strategies, Folk-theorem*

Gibbons chapter 2

Osborne chapter 14

Fudenberg and Tirole chapter 5

Green,E., and Porter, M. (1984) "Non cooperative collusion under imperfect information", *Econometrica*, 52, 87-100.

Grief, A., Milgrom,P., and Weingast, B. (1994) "Coordination, commitment, and enforcement: The case of the merchant guild, *Journal of Political Economy*, 102 (August): 745-776.

Week 8: *Games of Incomplete Information, Bayes Rule, Bayesian Nash Equilibrium*

Gibbons chapter 3

Osborne chapter 9

Week 9: *Signalling, Perfect Bayesian Equilibrium*

Gibbons chapter 4

Osborne chapter 10