Department of Economics

Delhi School of Economics

M.A. Economics

COURSE 005: INTRODUCTION TO GAME THEORY

Course Description

Game Theory, which systematically studies strategic interactions, is an important tool for economists. The main goal of this course is to introduce the basic concepts of Game Theory and to illustrate its importance in explaining various kinds of economic and social phenomena, especially those relating to the functioning of markets and institutions.

Topics

A. Games with Perfect Information:

1. Strategic form games: Dominated strategy, Nash and mixed strategy Nash equilibrium, Iterated elimination

2. Extensive form games: Action and strategy, Nash Equilibrium, Subgame perfect Nash equilibrium, One-deviation property and backward induction

3. Repeated games: Finitely and infinitely repeated game,

4. Bargaining: Alternating offers bargaining: Finite and infinite horizon

B. Games with Imperfect Information

5. Imperfect information and Subgame perfection: Information Set, Mixed and behavioural strategies

6. Static games of incomplete information: Bayesian Nash equilibrium, Harsanyi transformation, Auctions

7. Dynamic games of incomplete information: Perfect Bayesian Equilibrium, Signaling games, Reputation games, Intuitive Criterion

8. Information Economics: Adverse selection, Monopolistic Screening, Moral hazard

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Textbooks/Readings

1. *An Introduction to Game Theory*, M. Osborne
2. *A Course in Game Theory*, M. Osborne and A. Rubinstein
3. *A Primer in Game Theory*, R. Gibbons
4. *Advanced Microeconomic Theory*, A. Mas-Colell, M. Whinston and J. Green

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