SYLLABUS

MTMGT - GAME THEORY

Number of Contact Hours: 30hrs
Course Evaluation: Internal– 20 Marks + Written Exam – 80 Mark

Learning Outcomes:
Students should be able
(1) to distinguish a game situation from a pure individual's decision problem
(2) to explain concepts of players, strategies, payoffs, rationality, equilibrium
(3) to describe sequential games using game trees, and to use the backward induction to solve such games,

Module 1 6 hrs
Game theory - Introduction, examples, history of game theory, Elements of Game theory, classification of game theory,Importance of Game theory, Basic assumption of a game, value of a game

Module 2 10 hrs
Zero sum game-definition and example; Non zero sum game-definition and example, Strategy of Game theory: Pure strategy and Mixed strategy,Pay off matrix, Pay off matrix of two person zero sum game, General pay off matrix

Module 3 8 hrs
Saddle point, Minmax and Maxmin Principle, Mixed game theory: Pay off matrix. Rules of Dominance, Algebraic method and Graphic method for solving mixed game strategy.

Module 4 6 hrs
Applications of Game theory, Prisoners dilemma, Nash equilibrium, Nash's theorem, Advertising wars: Coke v/s Pepsi, Dynamic games - Examples

References

• Maynard Smith, J. Evolution and the Theory of Games, Cambridge University Press (1982).

• Nagel, Rosemarie (1995), "Unraveling in guessing games: an experimental study", American Economic Review 85, 1313–1326. [8]