SVKM's Narsee Monjee College of Commerce& Economics

Program: B.Com.(Economics & Analytics)				**Semester: III**	
Course: Game Theory and Strategic Behaviour **Academic Year: 2024-25**				**Code:**	
Teaching Scheme				**Evaluation Scheme**	
Lectures	**Practicals**	**Tutorials**	**Credits**	**Internal Continuous Assessment (ICA)**	**Term End Examinations (TEE)**
30	**Nil**	**Nil**	**02**	**20 marks**	**30 marks**

Learning Objectives:

1. Understand the basic concepts and terminology of game theory.
2. Analyze strategic interactions using game-theoretic models.
3. Identify and compute Nash equilibria in various game scenarios.
4. Explore cooperative and non-cooperative games and their implications.
5. Examine repeated games and strategies for long-term interactions.

Learning Outcomes:

At the end of the course, the students should be able to:

- Understand key terms in game theory such as games, strategies, payoffs, and utility functions.
- Apply game-theoretic models to analyze strategic interactions among decision-makers
- Identify and compute Nash equilibria in various game scenarios
- Explore cooperative and non-cooperative games and their implications
- Analyze strategies and equilibria in repeated games using concepts like tit-for-tat and grim trigger.

Pedagogy: Classroom Learning, problem solving, case studies, games and simulations, peer teaching, role play, projects or assignments.

Detailed Syllabus: (Per session plan)
Session Outline For Game Theory and Strategic Behaviour
Each lecture session would be of one hour duration (30 sessions)

Module	Module Content	Module Wise Pedagogy Used	Module Wise Duration
I	Introduction: What is a game? What does game theory study? Strategic thinking: some examples. Game theory and economics. Choice Under Uncertainty: Expected value of a risky action. Expected utility and risk attitudes.	Class room lectures	15

	Dominant And Dominated Strategies: The strategic form of a game. Dominant strategies: the prisoner's dilemma. Efficiency. The best response functions of the players. Mutual anticipation: successive elimination of dominated strategies. Social preferences and games.		
II	**Nash Equilibrium:** The Coordination Problem. The equilibria of a game: definition and examples. Why is it relevant the concept of equilibrium? Some simple properties of equilibria. The problem of multiplicity: equilibrium selection **Repeated Games and Tacit Cooperation**: The decision tree of a sequential game. Strategies: complete plans of action. Sequential rationality and credible threats. Backward induction and perfect Nash equilibrium. Strategic moves: commitments, threats and promises.	Class room lectures	15

Reference books:

Robert Gibbons, Game theory for Applied Economists, Princeton University Press.

Theory of Games and Economic Behavior, John Von Neumann and, Oskar Morgenstern, Princeton University Press.

Evaluation Pattern for 2 credit courses

The performance of the learner will be evaluated in two components. The first component will be a Continuous Assessment with a weightage of 40% of total marks per course. The second component will be a Semester end Examination with a weightage of 60% of the total marks per course. The allocation of marks for the Continuous Assessment and Semester end Examinations is as shown below:

a) Details of Continuous Assessment (CA)

40% of the total marks per course:

Continuous Assessment	Details	Marks
Component 1 (CA-1)	Class Test	10 marks
Component 2 (CA-2)	Assignment	10 marks

b) Details of Semester End Examination

60% of the total marks per course. Duration of examination will be one hour.

Question Number	Description	Marks	Total Marks
Q1.	Application based Question (Any Module)	6 x 1	6

Q2.	Answer any One out of Two (Module I)	12 x 1	12
Q3.	Answer any One out of Two (Module II)	12 x 1	12
		Total Marks	**30**