

Course name – Game Theory for Economics and Business: Strategy, Market Structures, and Decision Making

Credits – 4 credits

Faculty Name – Siddhi Gyan Pandey

Faculty Biography – Siddhi Gyan Pandey holds a doctorate in Economics from the Centre for Economic Studies and Planning, Jawaharlal Nehru University. Her research focuses on game theoretic analysis of social networks. Her teaching expertise lies in the areas of microeconomics, game theory, social networks, and quantitative areas like mathematical and statistical methods for economics.

Course Description – This course provides an introduction to game theory, a powerful analytical framework for understanding strategic interactions in economics and business. Students will learn to systematically analyze competitive and cooperative situations by identifying key elements such as players, strategies, possible outcomes, and individual preferences. The course will equip students with the tools to formalize strategic interactions as games and explore a range of solution concepts, including iterated elimination of dominated strategies, mutual best responses, and backward induction. Through a combination of theoretical models and real-world applications, students will develop a structured approach to decision-making in economic and business contexts. The course will examine how firms engage in strategic pricing, market entry, and competition, how individual entities negotiate and form alliances, and how institutions shape incentives and outcomes. By applying game-theoretic reasoning to case studies from industries, markets, and policy settings, students will gain a deeper understanding of how strategic thinking influences business strategy, economic policy, and everyday decision-making.

Prerequisites – Students must be familiar with i) basic set theory and algebra, ii) plotting simple functions in one variable on an x-y plane, and iii) optimization of functions in one variable using differentiation. For JSLH students, all of this is part of the syllabus covered in the foundational course QS-I. A short refresher for the relevant mathematical skills will be provided in class. However, mastery of said skills will be the responsibility of the student and be essential to grasping the concepts covered in this course.

Scheme of Evaluation and Grading –

- Internal assessment component: 70 marks
 1. First assessment: 20-mark in-class, closed-book test, conducted in the 5th week of the semester.
 2. Second assessment: 25-mark in-class, closed-book test, conducted in the 10th week of the semester.
 3. Third assessment: 15-mark presentation/viva, conducted in the 12th or 13th week of the semester.
 4. Class participation: 10 marks
- External assessment component: 30 marks, end-term exam (closed book).