

**Indian Institute of Technology Kanpur
Proposal for a New Course**

1. Course No: ECO7xx

2. Course Title: Game Theory Applications

3. Per Week Lectures:3 (L), Tutorial: 0 (T), Laboratory: 0 (P), Additional Hours: 0

Credits: (3*L+T +P+A): 9 credits

Duration of Course: Full Semester Course

4. Proposing Department: Economic Sciences

Other Departments which may be interested: None

5. Proposing instructor(s): Faculty members of the department of economic sciences

Level of the course: PG

6. Course Description:

A) Objectives: This course reviews the theory of games of complete and incomplete information, and analyzes a variety of economic applications of game theory.

B) Contents

S. No.	Broad title	Topics	No. of Lectures
1.	Review of Games of Complete and Incomplete Information	Normal Forms, Iterated Elimination of Strictly Dominated Strategies, Nash Equilibrium, Extensive forms, SPE, Repeated Games, Bayesian Nash equilibrium, Perfect Bayesian equilibrium, refinements	6
2.	Information Economics	Adverse Selection, Screening, Principal Agent Problem, Moral Hazard, Applications of Markets with Asymmetric Information	6
3.	Social Choice and Welfare Economics	Social Choice Theory, Arrow's Impossibility Theorem, Social Welfare Functions, Rawlsian and Utilitarian Forms	4
4.	Public Economics	Public Goods, Free Riding,	6

		Externalities, Coase, Ostrom, Pigovian Taxation, Market Based Solutions, VCG Mechanism, Lindahl pricing, Samuelson Rule	
5.	Miscellaneous topics	Mechanism Design, Repeated Games with Imperfect Monitoring, Auctions, Market Design, Fair Division, Nash Bargaining, Cooperative Game Theory, IO applications, Evolutionary Game Theory, Reputation, Cheap Talk, Myerson Satterthwaite, Gibbard Satterthwaite...	4

C) Prerequisites: None

D) Short summary for including in the Courses of Study Booklet: This course reviews the theory of games of complete and incomplete information, and analyzes a variety of economic applications including problems of asymmetric information (adverse selection, moral hazard), social choice theory, and public economics.

7) Recommended textbooks:

Games and Information: An Introduction to Game Theory by Eric Rasmusen. Wiley.

Game Theory by Michael Maschler Eilon Solan and Shmuel Zamir. Cambridge University Press.

A Course in Game Theory by Martin Osborne and Ariel Rubinstein. MIT Press.

8) Any other remarks: None.

Dated: 04/10/2022 Proposer: Dr. Vasudha Jain

Dated: _____ DUGC/DPGC Convener: _____

The course is approved / not approved

Chairman, SUGC/SPGC

Dated: _____