

GAME THEORY

Text: *Games, Theory and Applications*, by L. C. Thomas (out of print, first five chapters reprinted by UCR Printing and Reprographics)

Games in extensive, normal and characteristic forms as models for conflict and/or cooperation. Two-person zero-sum games, minimax theorem, relations to linear programming. Nash equilibrium theorem, bargaining, the core, Shapley value. Economic market games.

TOPICS	SUGGESTED NO. OF WEEKS' COVERAGE
Overview of game theory (§§ 1.1–1.4)	1/2
Examples of games, terminology and history of game theory.	
Two-person zero-sum games (§§ 2.1–2.10)	3
Extensive and normal forms, maximin criterion, mixed strategies, minimax theorem, domination, worthwhile strategies, solutions of matrix games, equilibrium pairs, games with perfect information.	
Two-person nonzero-sum games (§§ 3.1–3.11)	3
Differences with zero-sum games, examples, equilibrium pairs, Nash's theorem, finding pairs, solution concepts, cooperative games, bargaining or negotiation set, Nash's axioms, maximin bargaining solution, threat bargaining solution.	
N -person games (§§ 4.1–4.8)	1 1/2
Noncooperative games, characteristic functions and strategic equivalence, imputations, the core, stable sets, nucleolus, Shapely value.	
Market games (§§ 5.1–5.5)	1
Edgeworth market games, $[1, 1]$ -, $[M, N]$ -, $[1, N]$ - and $[N, N]$ -market games.	