

Course outline

Advanced Economic Theory

M.Phil: Fall Winter

Course Instructor: Saptarshi Mukherjee

Following list provides only a direction of the course. Depending on students' interest we will keep on molding it to suit their research acumen.

1. A revisit to real analysis: Bolzano-Weierstrass theorem, Heine-Borel theorem, Maximal LI, Basis, Span, Dimension of span, Kernel.
2. Graph theory with applications to economics: Digraph, Connected graph, Subgraph, Spanning tree, Basic theorems, Applications- Housing/Job market (Bipartite graphs), Transportation networks.
3. Selected advanced topics in game theory: Perfect Bayesian Equilibrium, Cooperative game theory (TU/NTU games, the core, Shapley value).
4. Selected topics in implementation theory: Virtual implementation, Implementation in undominated strategies.
5. Axiomatic choice from structured sets: Choice from lists, Choice from trees.
6. Theory of political motivations.
7. Network economics.

Reference:

1. Real Analysis: Rudin, W.

2. Graph Theory: Harary, F.
3. Game Theory: Fudenberg, D. & Tirole, J.
4. “Virtual Implementation in Nash Equilibrium”, (Dilip Abreu & Arunava Sen), *Econometrica*, Vol 59, No 4, 1991, 997-1021.
5. “Implementation in Undominated Strategies: A Look at Bounded Mechanisms”, *Review of Economic Studies*, Vol 59, No 4, 1992, 757-775.
6. “A Model of Choice from Lists”, *Theoretical Economics*, Vol 1, No 1, 2006, 3-17.
7. “Political Motivations.”, *Review of Economics Studies*, Vol 75, (July): 671-697, 2008
8. “Social and Economic Network”, Jackson, M.