ECO342A: Econometrics II / Instructor: Dr. Deep Mukherjee

Objective of the Course: This is the second level undergraduate course in Econometrics. The principal objective of the course is to introduce the students to some advanced econometric models, discuss estimation of the models and how to make proper inferences. The course is aimed to give an overview of "what lies beyond linear regression", and emphasis is placed on breadth, not depth. Students will be enabled with sufficient econometric tools in their armoury to pursue applied research either in academic world or professional career.

Course outline (Tentative, instructor may modify the content by 15%):

Topic	No. of lectures
Qualitative and limited dependent variable models: Linear probability model; Logit; Probit; Marginal effects; Odds ratio; Goodness of fit measure; Polychotomous choice models; Censored (Tobit) regression; Truncated regression; Sample selectivity model	10
Time series analysis: Stationarity v/s Non-stationarity; Tests for detecting non-stationarity; Cointegration; Fitting models with non-stationary time-series (Error correction model); Granger causality	8
Panel data analysis: Fixed Effects and Random Effects models; Hausman test; Heterogeneity in slope coefficients (Seemingly unrelated regression, Breusch-Pagan test for cross-equation dependence)	8
Impact evaluation: Treatment effects; Quasi-experiment; Counterfactuals and Selection Bias; Propensity score matching; Difference-in-difference estimator; Regression-discontinuity design	8
Simultaneous equations models: Simultaneity bias; Identification problem; Test for simultaneity; Indirect least squares; 2SLS estimator; 3SLS estimator; Seemingly unrelated regression	6
Total number of lectures (Class time: 50 Minutes)	**40**

Suggested Textbooks:

1. Baltagi, B. H. *Econometrics*, 5th Ed., Springer
2. Cameron, C. & Trivedi, P. K. *Microeconometrics*, Cambridge University Press
3. Stock, J. H. & Watson, M. W. *Introduction to Econometrics*, 3rd Ed., Pearson
4. Wooldridge, J. M. *Introductory Econometrics: A Modern Approach*, 5th Ed., Cengage