

CENTRE FOR INTERNATIONAL TRADE AND DEVELOPMENT

MA Economics (World Economy)

IE 504: Advanced Econometrics

Semester: Monsoon
Type: Optional
Credits: 4
Instructor: Professor Amit Shovon Ray

Course Objective

The course covers a selection of advanced econometric methods and their applications.

Pre-requisite

IE409: Introduction to Statistics and Econometrics

Course Outline

1. Review of CLRM and its assumptions
2. Problem of multicollinearity and solutions
 - a. Principal components analysis
3. Specification errors – Functional form, Inclusion of irrelevant variables
4. Problem of endogeneity - Omitted variables, measurement errors, reverse causality
5. Instrumental Variables Method
6. Seemingly Unrelated Regressions
7. Simultaneous Equations Model
 - a. Identification
 - b. ILS
 - c. 2SLS
 - d. 3SLS
8. Use of dummy variables in econometrics – structural change, threshold effects
9. Treatment effects
 - a. Difference in difference (DID)
 - b. Randomised control trials (RCT)
10. Models with discrete dependent variables:
 - a. Binary
 - b. Multinomial, Ordered, Sequential, Randomised
11. Models of limited dependent variables
 - a. Censored model
 - b. Truncated models
12. Models for Panel data
 - a. Fixed effect versus random effects models

Text Books:

1. W.Greene, *Econometric Analysis*, Prentice Hall
2. J.M. Wooldridge, *Introductory Econometrics: A modern approach*, South Western Cengage Learning
3. J. Johnston and J. DiNardo, *Econometric Methods*
4. G. S. Madala, *Limited Dependent and Qualitative Variables in Econometrics*, Cambridge University Press
5. G. Judge et al., *The Theory and Practice of Econometrics*, Wiley