

MPHIL in International Trade and Development

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| Course Code: | DI701 |
| Course Title: | QUANTITATIVE METHODS |
| Course No.: | |
| Credit: | 4 credits (Optional course) |
| Semester: | Monsoon semester for MPHIL (ITD) 1 st year students |
| Course Instructor: | Amit Shovon Ray |

Course Objective

This is an optional course on research methods used in applied economic research. The course will equip students with knowledge and skills of a selection of advanced econometric tools and their applications. Apart from learning methods, students will also be exposed to applied research papers that have used these methods in a wide range of research topics in development and trade. It will also feature a hands-on experience of applying some of these methods using real or simulated data sets.

Course Policy

Apart from mid-sem and end-sem exams, evaluation will be based on class presentation of research papers, referee reports, and one assignment requiring application of the methods learnt.

Course Outline

1. Introduction to applied economic research
2. Recapitulation of basic econometrics: OLS and GLS
3. Structural change, dummy variables, non-linearity in regressions
4. Dichotomous and polychotomous dependent variables
5. Limited dependent variables and duration data
6. Estimation for panel data
7. Endogeneity, Causality and Simultaneous equation models
8. Applications: Production functions estimations
9. Applications: Testing trade models

Readings:

Text Books

- W. Greene, Econometric Analysis, Prentice Hall.
- G.S.Maddala, Limited Dependent and Qualitative Variables in Econometrics, Cambridge University Press, Cambridge.
- J. Johnston and J. DiNardo, Econometric Methods. McGraw Hill.
- G.Judge et al, The Theory and Practice of Econometrics.

Selected Papers

- A.A. Walters, “Production and Cost Functions: An Econometric Survey”, Econometrica, 1963, Vol 31 No 1, pp 1-66.
- A.V.Deardoff, “Testing Trade Theories and Predicting Trade Flows”, in Handbook of International Economics Vol I, (chapter 10), R.W.Jones and P.B.Kenen (eds.), Elsevier Science, 1984.
- A.Zellner, J.Kmenta and J.Dreze, “Specification and Estimation of Cobb-Douglas Production Function Models”, Econometrica, 1966, Vol 34, pp 784-795.
- E.E.Leamer, Sources of International Comparative Advantage, MIT Press, 1984.
- F.Forsund, C.Lovell and P.Schmidt, “A Survey of Frontier Production Function and their Relationships to Efficiency Measurement”, Journal of Econometrics, 1980.
- Greene. W, “Frontier Production Functions”, in Handbook of Applied Econometrics Vol II edited by M.Hasheem Pesaran and Peter Schmidt, Blackwell (UK), 1997. Chapter 3, pp 81-166.
- I.Hoch, “Simultaneous Equation Bias in the Context of the Cobb-Douglas Production Function”, Econometrica, 1958, Vol 26, pp 566-578.
- K.J.Arrow, H.B.Chenery, B.S.Minhas and R.M.Solow, “Capital-Labor Substitution and Economic Efficiency”, Review of Economics and Statistics, 1961, pp 225-250.
- L.R.Klein, “Macroeconomics and the Theory of Rational Behaviour”, Econometrica, 1946, Vol 14, pp 93-108.
- R.M.Solow, “Technical Change and the Aggregate Production Function”, Review of Economics and Statistics, 1957, pp 312-320.
- R.R.Nelson, “Aggregate Production Functions and Medium Range Growth Projections”, AER, 1964, LIV.