**INDIAN STATISTICAL INSTITUTE, DELHI**
**MSQE, Part II**
**Econometric Methods II**

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## I.      Course Description

This course intends to provide students with the essential econometric tools required for *micro*

economic analysis. Each section in the course will consist of lectures on a particular econometric

method followed by detailed discussion of journal articles that have used that econometric

technique within a (mostly) developing country context.

The course content is divided into three modules. In the first module we will discuss

randomization technique for policy analysis. In the second module, which would also form the

bulk of the course, we will study different methods of program evaluation. In the last module

concerns with traditional data analyses, within a policy evaluation context in developing

countries, will be discussed.

You will be given at least two assignments during the course. The assignments will involve using

the econometric techniques taught in class for data analysis.

You are expected to have knowledge of basic regression analysis and statistics for this course.

## II.      Evaluation of Performance

Your performance in this course will be evaluated on the basis of the following:

Midterm               40%

Final Exam            50% (cumulative course content)

Assignments           10%

## III.      Course Readings

**Textbooks:**

Angrist, Joshua and Jorn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion* (Princeton University Press)

Wooldridge, Jeffrey. *Econometric Analysis of Cross Section and Panel Data* (Cambridge, MIT Press)

**Topics and Readings:**

## I. Establishing Causality:

**The Ideal Policy Experiment:** *Random Program Assignment*

Angrist, Joshua and Jorn-Steffen Pischke. 2009. Mostly Harmless Econometrics: An Empiricist's Companion (Princeton University Press), Chapter 2.

Schultz, T.P. 2004 "School Subsidies for the Poor: Evaluating the Mexican Progresa Poverty Program." *Journal of Development Economics*, 74(1): 199-250.

## II. Program Evaluation

**1. Linear Models :** *Issues in Policy Analysis*

Wooldridge, Jeffrey. Econometric Analysis of Cross Section and Panel Data, Chapter 4 - Sections 4.1, 4.2 (4.2.1 - 4.2.3), 4.3.1 and 4.4

Rosenzweig, Mark and K. Wolpin. 2000. "Natural 'Natural' Experiments in Economics." *Journal of Economic Literature*, 38(4), 827 − 874.

**2. Instrumental Variables and 2SLS models**

Wooldridge, Jeffrey. Econometric Analysis of Cross Section and Panel Data, Chapter 5 - Sections 5.1, 5.2 (5.2.1 -5.2.3)

Dinkelman, Taryn. 2008. "The Effects of Rural Electrification on Employment: New Evidence from South Africa," *American Economic Review*, forthcoming.

**3. Panel Data and Difference-in-Differences models**

Angrist, Joshua and Jorn-Steffen Pischke. 2009. Mostly Harmless Econometrics: An Empiricist's Companion (Princeton University Press), Chapter 5.

Wooldridge, Jeffrey. Econometric Analysis of Cross Section and Panel Data, Chapter 10 − Section 10.1, 10.2, 10.3, 10.4 (10.4.1, 10.4.2), 10.5 (10.5.1, 10.5.2, 10.5.5), 10.6.1

Bertrand, Marianne, Esther Duflo and Sendhil Mullainathan.2004. "How Much Should We Trust Difference-in-Differences Estimates?" *Quarterly Journal of Economics*, 119 (1): 249 − 275.

Duflo, Esther. 2001. "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment." *American Economic Review*, 91(4): 795-813


**4.    Regression Discontinuity Design**

Angrist, Joshua and Jorn-Steffen Pischke. 2009. Mostly Harmless Econometrics: An Empiricist's Companion (Princeton University Press), Chapter 6.

Hoxby, Caroline. 2000. "The Effects of Class Size on Student Achievement: New Evidence from Population Variation." *Quarterly Journal of Economics*, 115: 1239 – 1285.

Jacob, Brian and Lars Lefgren, 2004, "Remedial Education and Student Achievement:
A Regression-Discontinuity Analysis," *Review of Economics and Statistics* 86(1): 226-44


**5.   Propensity Score Matching**

Ravallion, Martin. *"Evaluating Anti-Poverty Programs." Handbook of Development Economics Volume 4*, edited by Robert E. Evenson andT. Paul Schultz, Amsterdam, North-Holland.

Jalan, Jyotsana and Martin Ravallion. 2003. "Estimating Benefit Incidence for an Anti-poverty Program using Propensity Score Matching." *Journal of Business and Economic Statistics*, 21(1): 19-30.


## III.         Sample Selection and Attrition Bias

Wooldridge, Jeffrey. Econometric Analysis of Cross Section and Panel Data, Chapter 17

Maluccio, John A. 2004. "Using Quality of Interview Information to Assess Nonrandom Attrition Bias in Developing Country Panel Data," *Review of Development Economics*, 8(1).