THE UNIVERSITY OF WATERLOO

Department of Economics

ECONOMICS 673

RESEARCH DESIGN AND POLICY EVALUATION IN ECONOMICS

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Course objectives:

This course provides an overview of modern methods of policy evaluation. It also examines the experience with various research designs, both experimental and non-experimental methods. Students are expected to learn the advantages and disadvantages of alternative research designs and the experience with implementing these research strategies in various applied settings. Most of the applications examined in the course come from labour economics (and in particular labour supply) including welfare-to-work, education production functions, minimum wages, and disability policy.

The topics to be covered include the following:

1. Causal inference and the evaluation problem
2. Experimental methods (randomized trials)
3. Natural experiments and difference-in-differences methods
4. Selection bias correction methods
5. Instrumental variables methods
6. Matching estimators
8. Regression discontinuity research designs

Assessment strategies:

Final grades are based on assignments (30%), a presentation (20%), a midterm test (20%) and a final exam (30%). Class participation is encouraged, and will be rewarded.

The midterm test and the final examination are used to assess the student's understanding of the material covered in the lectures and assigned readings. The midterm test also provides students with valuable feedback on their understanding of the material.

The assignments allow students to apply the research methods covered in the lectures and assigned readings to several real-world situations and to obtain experience with empirical

analysis using publicly available data. The presentation will involve a critique of the research design of a published paper.

Texts and reference materials:

The reading list is attached separately and is almost entirely journal articles.

There is no textbook exactly suitable for this material. I recommend *Mostly Harmless Econometrics* by Josh Angrist and Steffen Pischke.

Some of the econometric theory needed for the course is covered in Greene, *Econometric Analysis*, 5th edition, chapters 13, 14, 15, and 22 and in Wooldridge, *Introductory Econometrics: A Modern Approach*, 3rd edition, 2006, chapters 13, 14, 15, 16 and 17.

The mini course taught by Imbens and Wooldridge *What's New in Econometrics* covers many of the methods studied in this course. These lectures are available at http://www.nber.org/WNE.

For the relevant background in labour economics, students should read the relevant chapters in Benjamin, Gunderson, Lemieux and Riddell, *Labour Market Economics: Theory, Evidence and Policy in Canada*, 6th edition, 2007.

Statistical software:

Stata is to be used for all empirical assignments. Students not familiar with Stata should learn the basics using the Stata tutorial.

Key Dates:

Midterm: Thursday February 14th

Final: Tuesday April 2nd

Assignment due dates will be available during the first week of classes, and Presentation dates are TBA (sign-up based), and the exact range of dates I use depends on class size