This course reviews the basic statistical methods of inferring the causal impact of public policy initiatives on social outcomes. Topics include randomized controlled trials, instrumental variable analysis, regression discontinuity designs, difference-in-difference “natural experiments,” and propensity score/nearest neighbor matching methods. The benefits and drawbacks of each method will be discussed; students will gain practical experience in conducting each method using instructor-provided datasets and Stata statistical software. The course is designed for the benefit of students who intend to conduct self-directed policy evaluation research. The course is appropriate for students with a strong grounding in statistics, including multiple regression and limited dependent variable models. Whenever possible, topics will be discussed using intuitive and/or graphical methods, with minimal reference to matrix algebra or calculus.

Meeting Time
Tuesdays, 8:30-11:20 AM, Music 212

Instructor
Jacob Vigdor, jvigdor@uw.edu, 616-4436, office hours Mondays 10:30 AM - 12:30 PM in Parrington 324 and by appointment.

Prerequisites
All students enrolled in the course are expected to be familiar with the statistical concepts and techniques necessary to estimate and interpret multivariate ordinary least squares (OLS) regression. Familiarity with matrix algebra is advantageous but not necessary.

Readings
Readings will be drawn from two required texts as well as a series of journal articles available as electronic resources and linked in the course calendar listings below. The required texts are:

Shadish, W., T. Cook and D. Campbell (2001) Experimental and Quasi-Experimental Designs for Generalized Causal Inference (Links to an external site.), 2nd ed. Houghton Mifflin. Will be available on 4-hour reserve at Odegaard library, also available for purchase for about $140 (new).
I also recommend that you own an econometrics textbook that covers multiple regression and applied topics. The reading list refers to the following textbook:


however any substitute book with comparable subject coverage is acceptable. A copy of Stock and Watson will be available on reserve at Odegaard library.

Assignments and Grading Policy
The assignments in this course consist of four problem sets, which will be distributed on a biweekly basis, one discussion paper, a term project, and a final exam. The problem sets will each involve hands-on data analysis using datasets I provide. The term project will not involve actual data analysis, but will require you to identify a policy-relevant research question, a source of data which could be used to answer it, and a methodological strategy for making a causal claim. These various assignments, along with class participation, will be weighted in the following manner to determine your grade for the course:

- Final exam (scheduled for Tuesday, December 15th 10:30 AM – 12:20 PM) 20%
- Discussion paper 10%
- Problem sets (4) 10% each
- Term project 25%
- Class participation 5%

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<thead>
<tr>
<th>Date</th>
<th>Details</th>
<th>Time</th>
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<tbody>
<tr>
<td>Tue Oct 6, 2015</td>
<td>The Logic of Causality</td>
<td>8:30am to 11:20am</td>
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<tr>
<td>Tue Oct 13, 2015</td>
<td>A quick overview of randomized controlled trials (RCTs) Discussion Paper</td>
<td>8:30am to 11:20am due by 8:30am</td>
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<tr>
<td>Tue Oct 20, 2015</td>
<td>Simple quasi-experiments I Assignment 1</td>
<td>8:30am to 11:20am</td>
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<td>Tue Oct 27, 2015</td>
<td>Simple quasi-experiments II</td>
<td>8:30am to 11:20am</td>
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<td>Tue Nov 3, 2015</td>
<td>Instrumental variables I Assignment 2</td>
<td>8:30am to 11:20am</td>
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<td>Tue Nov 10, 2015</td>
<td>Instrumental Variables II</td>
<td>8:30am to 11:20am</td>
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<tr>
<td>Tue Nov 17, 2015</td>
<td>Regression discontinuity I Assignment 3</td>
<td>8:30am to 11:20am  due by 8:30am</td>
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<tr>
<td>Tue Nov 24, 2015</td>
<td>Regression discontinuity II</td>
<td>8:30am to 11:20am</td>
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<tr>
<td>Tue Dec 1, 2015</td>
<td>Matching estimators I Assignment 4</td>
<td>8:30am to 11:20am  due by 8:30am</td>
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<td>Tue Dec 8, 2015</td>
<td>Matching estimators II/ course summary Term project</td>
<td>8:30am to 11:20am due by 8:30am</td>
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<tr>
<td>Tue Dec 15, 2015</td>
<td>Final Exam Final exam</td>
<td>10:30am to 12:20pm due by 12:20pm</td>
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The Logic of Causality
Oct 6, 2015, 8:30am - 11:20am
A quick overview of randomized controlled trials (RCTs)
Oct 13, 2015, 8:30am - 11:20am
Calendar PPM 512 B: Data Analysis Practicum
Location MUS 212
Details Angrist and Pischke chapters 2.2-2.3
Shadish, Cook and Campbell chapter 8
Stock and Watson Chapters 13.1-13.3
Ludwig, Jens et al. (2007) “What Can We Learn About Neighborhood Effects from the Moving to Opportunity Experiment? (Links to an external site.)” American Journal of Sociology v.114 pp.144-188.

Simple quasi-experiments I
Oct 20, 2015, 8:30am - 11:20am
Simple quasi-experiments II
Oct 27, 2015, 8:30am - 11:20am
Calendar PPM 512 B: Data Analysis Practicum
Location MUS 212
Details Angrist and Pischke chapters 3.2, 5
Shadish, Cook and Campbell Chapters 4-6
Stock and Watson Chapter 13.5-13.6

Instrumental variables I
Nov 3, 2015, 8:30am - 11:20am
Calendar PPM 512 B: Data Analysis Practicum
Location MUS 212
Details Angrist and Pischke Chapter 4
Stock and Watson Chapter 12

**Instrumental Variables II**

Nov 10, 2015, 8:30am - 11:20am  
**Calendar** PPM 512 B: Data Analysis Practicum  
**Location** MUS 212  

**Regression discontinuity I**

Nov 17, 2015, 8:30am - 11:20am  
**Calendar** PPM 512 B: Data Analysis Practicum  
**Location** MUS 212  
**Details** Angrist and Pischke chapter 6  
Shadish, Cook and Campbell Chapter 7  
Thistlethwaite, Donald L. and Donald T. Campbell (1960) “Regression-Discontinuity Analysis: An Alternative to the Ex Post Facto Experiment. (Links to an external site.)” *Journal of Educational Psychology* v.51 pp.309-317.  

**Regression discontinuity II**

Nov 24, 2015, 8:30am - 11:20am
Calendar PPM 512 B: Data Analysis Practicum
Location MUS 212

Matching estimators I
Dec 1, 2015, 8:30am - 11:20am
Calendar PPM 512 B: Data Analysis Practicum
Location MUS 212
Details Angrist and Pischke chapter 3.3
Matching estimators II/ course summary
Dec 8, 2015, 8:30am - 11:20am

Calendar  PPM 512 B: Data Analysis Practicum
Location  MUS 212