ECO 439
Empirical Methods in Microeconomics

Department of Economics University of Toronto

Winter 2016
Class: Tuesdays 3:00 pm - 5:00 pm

Location: BF315

Dr. Arthur Blouin
Assistant Professor
Department of Economics
Max Gluskin House
150 St. George Street, Room 305

Phone: 416-946-3404
email: a.blouin@utoronto.ca
Office hours:
Wednesday 2:00-3:00
Friday 2:30-3:30

Course Description:

This course will focus on empirical methods used to estimate causal effects. It will cover the main empirical strategies used in micro-econometrics: randomized control trials, differences-in-differences, instrumental variables, and regression discontinuity. We'll be working mostly from "Mostly Harmless Econometrics" but the book is not required.

Pre-requisites

Applied Econometrics (ECO375/374)

OR

80% in:
Microeconomic Theory (ECO200/204/206)
AND
Quantitative Methods in Economics (ECO220/227)

This is a really tough course aimed at preparing students for econometrics at graduate school. The text-book is a graduate level book, and I assume that the type of person that takes a micro-econometrics class as an elective is probably planning to go to graduate school. There are derivations and proofs throughout, so if your math skills are poor you will find it tough to do well.

I will assume you can already derive regression estimators, you have a conceptual understanding of standard errors and confidence intervals, and are comfortable with coding in Stata. The course is about how to think about applying these tools to be able to make causal claims.

Grades:

- Term paper (20%)
- (4) Problem sets (20% - 5% each)
- Midterm exam (20%)
- Final exam (40%)

Any paper/problem set not on my desk or in my hand before March 1st will be considered late. Papers are penalized by 2^x% where x is the number of days late.

Term Paper:

The term paper will test a hypothesis. It doesn't have to be strictly economics; I think of this as a stats class applied to economics. In the past I've received a lot of papers testing sports hypotheses, for example. You are expected to clearly outline some hypothesis, develop an empirical strategy and implement your strategy to test your hypothesis. You will be graded on the methods used and your ability to understand how close you have come to a causal estimate. The actual estimates you get don't matter for your grade - i.e. I don't care if nothing is statistically significant and you can't make any conclusions from your work – just interpret things properly.

I won't be strict about length of the paper, but there is no need for it to be 10+ pages, and you'll likely have a tough time doing what you need to do in 4 or fewer pages. Look at papers published in the *American Economic Review: Paper and Proceedings* as a guide for format and length.

The following is a guideline of what I expect:
- 5-8 pages of text with 2-3 tables of supporting evidence and a page citing sources.
- An introduction which outlines your hypothesis and basic argument
- A (short) data/sources section describing where your supporting evidence is coming from
- A results section where you describe how your evidence relates to your hypothesis.
    - In this section it is crucial to document and discuss both the strengths AND weaknesses in the evidence you present. There are no perfect papers, even seminal papers in the field rarely (if ever) perfectly clinch arguments. Good papers outline weaknesses and discuss how concerned we should be with these weaknesses when making inferences.

Problem sets:

There will be 4 problem sets applying techniques learned in class to data. For this you will need Stata, the small version will be fine. You'll have to run some analysis in Stata and interpret your findings in the .do file with comment tags e.g.: /*COMMENT*/

If you aren't comfortable with Stata, there is a TA who will hold weekly office hours. His name is Daniel Ershov and you can reach him at: daniel.ershov@mail.utoronto.ca

I will post a problem set in Blackboard and announce in class when I do. Problem sets will be posted as soon as we've covered enough material for you to be able to do them. You'll have a week from when I announce that the problem set is posted to complete it. Each one is 3-4 questions and should take you about an hour to do.

Please email completed problem sets to the following email address:

There are workstations with Stata on them in the Rotman computer lab, otherwise you can get a 6-month student version of Stata online for $38 here: http://www.stata.com/order/new/edu/gradplans/student-pricing/

Mid-term:

A grade of 0 will be given to students who do not write the midterm exam unless an appropriate and convincing note is received within one week of the missed test, explaining why the test was missed.

If the student misses the test due to illness:

- The note must be provided using the University of Toronto medical certificate. No other documentation will be accepted. You can find a copy of the form here: http://www.healthservice.utoronto.ca/pdfs/medcert.htm
- The form must be completed by a Medical Doctor, and include the doctor's OHIP registration number.
- Only original notes will be accepted. I will not accept photocopies or emailed certificates.
- The note must clearly state that on the date of the test, the student was too sick to write the test. Notes that simply state that a doctor saw the student on the date of the midterm will not be accepted. Illness before the test is not sufficient grounds for missing the test. Nor will I accept notes that indicate that the student would have performed "sub-optimally".

- To comply with these requirements, it is expected that the student will have met with the doctor on the date of the test.
- **The student must email me the day of the test to indicate that they will not be able to write the test.**
- I will review each sick note to determine whether there are sufficient grounds for a student to be excused from a test. Part of this review process may include meeting with the student, and/or following up with a physician.
- It is an academic offense to feign illness to avoid a test.

If the student misses a term test due to another excused absence (e.g., funeral, car accident):

- The note must be accompanied by a noted from a responsible third party that I can verify *in order for excusal to even be considered*. The validity of the excuse will also be evaluated by academic staff in the Department of Economics.

If a student has been excused from the midterm exam, he or she will be permitted to write a make-up test. The make-up test will be held on Wednesday February 24th, 9:00-11:00am. Consistent with university policy, there is no "make-up test" for the make-up test. No medical excuses or scheduling conflicts will be accepted, and a grade of zero will be applied if a student fails to write the make-up test.

Final Exam:

The final will be governed by the University's rules for missing final exams.

Course Website

The UofT Blackboard Portal will be used for this course. I'll use it to make announcements to the class and to post lecture notes, additional readings, practice questions, etc. It is therefore vital that you log-on to Blackboard at least once a week.

Email Policy

I will respond to emails during normal business hours, but:

- If your question takes more than a paragraph to answer I'll ask you to see me in office hours
- I'm not going to reply at all if the answer is in the syllabus or on Blackboard. If you get no response from me, that's the most likely reason.
- I'm not going to do anything related to grades, exam solutions, etc. over email. I'll ask you to come see me in office hours for that.
- If it's an issue that requires more than one email from me, you'll have to come see me in office hours. For example: if you email me about a paper topic and I reject your topic and you want to argue, complain, vent, get more details on why, etc. I'm happy to do the approval/rejection itself over email, but after that you'll have to come in.
- If I ask you over email to come to office hours and you continue the conversation over email I probably won't reply.

Academic Misconduct

Students should note that copying, plagiarizing, or other forms of academic misconduct will not be tolerated. Any student caught engaging in such activities will be subject to academic discipline ranging from a mark of zero on the assignment, test or examination to dismissal from the university as outlined in the academic handbook. Any student abetting or otherwise assisting in such misconduct will also be subject to academic penalties.

As a student it is your responsibility to ensure the integrity of your work and to understand what constitutes an academic offence. If you have any concerns that you may be crossing the line, always ask your instructor. Your instructor can explain, for example, the nuances of plagiarism and how to use secondary sources appropriately; he or she will also tell

you what kinds of aids -- calculators, dictionaries, etc. – are permitted in a test or exam. **Ignorance of the rules does not excuse cheating or plagiarism.** For more information regarding the Code of Behaviour on Academic Matters please visit (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm).

Outline and Reading list:

Week 1: Introduction

Week 2: Regression Basics and Randomized Trials

Mostly Harmless Econometrics Chapter 2

Week 3: Panel Data

Mostly Harmless Econometrics Chapter 2, 3 and 5

Week 4: Differences in Differences

Mostly Harmless Econometrics Chapter 5

Week 5: Instrumental Variables

Mostly Harmless Econometrics Chapter 4

Week 6: Mid-Term

Week 7: Regression Discontinuity

Mostly Harmless Econometrics Chapter 6

Week 8: Clustering Standard Errors and Robust Standard Errors

Mostly Harmless Econometrics Chapter 8

Week 9: Quantile Regression

Mostly Harmless Econometrics Chapter 7

Week 10: Experimental Methods

Vern Smith (1992) "Experimental Methods in Economics". *Unpublished (http://www.upf.edu/leex/_pdf/history/Inaugural_Lecture.pdf)*

Week 11: Big Data

Varian, Hal (2014) "Big Data": New Tricks for Econometrics". *Journal of Economic Perspectives*

Week 12: Review

Exam Review and catching up if we're behind.