Instructor
Chris Auld
auld@uvic.ca
BEC 348

Office hours
Wednesdays 1:00-2:30 (by Zoom), or drop-in or by appointment.

Course page
Available on Brightspace.

When and where
Lectures: Mondays and Thursdays 1:00-2:20. DSB C108.
Labs: Tuesdays 6:30-7:20. BEC 170.

Prerequisites
Economics 203 and either 345 or 365, or equivalent.

Course overview.

The course provides an introduction to the practice of applied econometrics, focusing on specifying, estimating, interpreting, and reporting estimates from econometric models, particularly in contexts in which the goal is to learn about causal effects. After completing this course, students should be capable and critical consumers and producers of workhorse econometric models, including linear regression, instrumental variables, difference-in-difference, and regression discontinuity. Problem sets and lectures emphasize applications of these methods to real data, including practical issues such as writing statistical code and preparing tables and graphs, and the course draws heavily on applied examples in the literature.

Prerequisites.

The formal prerequisites are intermediate microeconomics (Econ 203 or equivalent) and at least one semester of econometrics, either Economics 345 or 365. You are expected to be comfortable with basic statistics and linear algebra. If you lack these prerequisites but consider yourself nonetheless prepared for the course, please talk to me.
**Topics.**

1. Scientific notions and models of causation.
2. OLS: properties, specification, and interpretation.
3. Frequentist inference.
4. Instrumental variables.
5. Panel data.
6. Regression discontinuity.

All topics will be addressed using a combination of blackboard theory, applied examples from the literature, and hands-on computing exercises using Stata. Since this is an applied course, we will also explicitly consider, along the way, a number of issues which are often not discussed in core theory courses, such as:

- How to write good statistical code.
- How to interpret regression estimates and related statistics in published papers.
- How to spot and avoid common misunderstandings and errors in statistical research.
- How to clearly present, interpret, and discuss estimates of econometric models.
- How to create good graphs and tables to present your findings, and how to get your output from Stata into Word or \LaTeX.

Note that topics may be added or removed as the course progresses according to the preferences of the instructor and the class.

**Labs.**

A weekly lab has been set, but we will not necessarily meet for labs on a weekly basis. Instead, lab time will be used at my discretion to reinforce selected topics, provide practice sessions as necessary, or to make up for any lectures I may miss due to travel or to illness.
Computing.

For reasons we will discuss during the first lecture, the required software for this course is Stata. The current version is 17, and this version has a few non-trivial advantages over older versions, but any reasonably modern version (version 12 or greater) is suitable for the course. Stata is available in the social sciences computing lab and can be purchased or leased from stata.com at a discounted price from,

https://www.stata.com/order/new/edu/profplus/student-pricing/

starting at $48USD for a six-month lease on the “basic” edition. Note that this version is limited relative to more expensive versions, but it is more than sufficient to complete the assignments for this course, and sufficient for most research projects. However, you may wish to spend a little more and upgrade to the “standard edition” if you intend to use Stata for a large research project (in which you need to keep more than 2,000 variables or more than two billion observations in memory).

Note that you will be required to write Stata code to implement various econometric methods. Lab sessions will focus on the mechanics of using Stata and writing code. Note that exam questions probing your understanding of Stata syntax may be posed.

You are encouraged to bring a laptop to class. You may then follow along with statistical demonstrations and have access to applied papers we study as examples.

Materials.

The required textbook is,

- Cameron, C. and P. Trivedi (2010), Microeconometrics Using Stata.

Cameron and Trivedi sits somewhere between an econometrics textbook and a Stata user’s guide, so it is very useful for an applied course such as this one. Some assignment questions will be drawn from this book, but note we will not follow its structure nor (anywhere near) all of its content. Another textbook we will draw on, which has the advantage of being free (although you may also purchase a hardcopy from your favorite online retailer), is

  https://mixtape.scunning.com/

which is not a textbook per se but rather an overview of the strategies researchers use to attempt to make causal inferences from data.
Slides and other current course material will be made available on Brightspace. You should read these materials carefully, but not use them exclusively. Other recommended books include:


Like the “Mixtape,” MHE is a lively, and not very technical, discussion of the major “designs” (research strategies) used in current applied econometrics. It is not a substitute for an econometrics textbook, but is an excellent supplement to an econometrics textbook. Similarly, *Mastering ‘Metrics: The path from cause to effect* by the same authors covers much of the same material at an even lower technical level and is also recommended.


You should have a good advanced undergraduate level econometrics textbook as a reference. It need not be Wooldridge, but Wooldridge is a recommended choice.

**Assignments.**

Regular assignments will be given. They will, variously, involve:

- solving theoretical problems.
- finding, downloading, and cleaning data to generate an estimation sample.
- generating tables and graphs showing descriptive statistics and estimation results.
- specifying and estimating models and calculating and interpreting various test statistics.
- replication or critical assessment of published empirical research.

Note that you are not just allowed, but encouraged, to work on assignments with your classmates. However, note carefully that you must write up your answers on your own.

Penalties will be assessed if you do not hand an assignment in on time and do not contact me prior to the due date, so if you cannot avoid handing an assignment in late, please contact me.

All assignments must be completed to receive a passing grade in the course.
Exams.

There will be an in-class midterm scheduled during the first week of classes and a final exam which may be in-class or take-home at my discretion. A passing grade on the final exam must be achieved in order to receive a passing grade in the course.

Evaluation.

The weights used to calculate your final grade are:

- Assignments 50%
- Midterm exam 15%
- Final exam 35%

You must complete all course components to receive a passing grade in the course. In the event you cannot write the midterm (for a reason recognized by University policy), a deferred exam will be scheduled. Refer to University policy on incomplete courses if you cannot write the final exam.

Attendance.

Attendance will not be taken, but is expected. You are responsible for all material covered in lectures whether or not you attend any given lecture. Lecture slides posted online do not contain all of the material discussed in class and are not an adequate substitute for attending lectures.

Contacting the Instructor.

Questions regarding class material should usually be posed during class or in person during office hours. It is not usually feasible to provide lengthy explanations of class material over email. Should you send email for whatever reason, please put “Econ 465” in the subject line. If I do not respond within 48 hours, please resend.

Travel Plans.

Students are advised not to make work or travel plans until after the examination timetable has been finalized. Students who wish to finalize their travel plans at an
earlier date should book flights that depart after the end of the examination period. There will be no special accommodation if travel plans conflict with the examination.

**Policy on Inclusivity and Diversity.**

The University of Victoria is committed to providing an environment that affirms and promotes the dignity of human beings of diverse backgrounds and needs.

**Other policies.**

All University of Victoria and Department of Economics policies apply, including but not limited to:

- [http://library.uvic.ca/site/lib/instruction/cite/plagiarism.html](http://library.uvic.ca/site/lib/instruction/cite/plagiarism.html)